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USAID FIRMS PROJECT

Sales and Labor Multiplier Study for Dates Value Chain



November 2013

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Data Page

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Abstract

USAID through its Firms Project has provided significant assistance to the dates value chain in Pakistan. The results of the assistance showed significant improvement in the sales and employment generation. The documentation of these results was limited to the improvement made at the producers or/at farm gate level. This study was commissioned by the USAID Firm project with an objective to develop a model to estimate the economic impact of interventions throughout the entire value chain dates sector in Pakistan. The study collected and analyzed data from different stakeholders in the dates value chain and calculate a multiplier for the change in sales and jobs with necessary assumptions and qualifiers that provided USAID a level of confidence for attribution to its investments.

Acronyms

BRC	British Retain Consortium
CSO	Civil Society Organization
DM	Distribution Margin
EU	European Union
FTE	Full Time Equivalent
GAP	Global Agricultural Practice
IR	Intermediate Result
KP	Khyber Pakhtunkhwa
LOE	Level of Effort
M&E	Monitoring and Evaluation
MD	Man-day
MSMEs	Micro, Small and Medium Enterprises
MT	Metric Ton
PHC	Pre-Harvest Contractor
PKR	Pakistani Rupee
PMP	Performance Management Plan
PPT	Power Point Presentation
SIA	Strategy into Action
SME	Small and Medium Enterprises
SMEDA	Small and Medium Enterprises Development Authority
SMS	Short Messaging Service
SOW	Scope of Work
TFO	Technical Field Officers
US	United States
USAID	United States Agency for International Development
USD	United States Dollar
USG	United States Government

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Exchange Rate

1 USD = 98.36 PKR

Executive Summary

Global Scenario

Dates fruit is produced primarily in a hot and dry climate and the main production areas are South West Asia (mainly the Arab region) and North Africa with Middle East and other dates producing Asian countries like Pakistan and Iran collectively contributing two thirds to the world's dates production. The dates belt stretches from the Indus Valley in the East to the Atlantic in the West. Very small volumes are produced outside these regions and USA is one country which has a presence in this industry..

The dates industry is severely underdeveloped in majority of the date producing countries .Few countries like the USA, Israel, Tunisia and Algeria have well developed date production and export industries.

Regional Market Perspective

Date is one of the major horticulture crops of Pakistan with an annual production of around 557,000 metric tons (2011). The fruit is produced primarily in Sindh, Baluchistan and KPK where the soil and climatic conditions suit this desert fruit extremely well.

Khairpur, home to one of world's densest plantation of date palms, produces around 54% of country's total production and around 90% of Sindh's production. In spite of this huge competitive advantage, the date industry of the country remains extremely underdeveloped and backward. Growers are financially weak and seriously lack understanding of Good Agriculture Practices.

Links and relationships between numerous stakeholders are weak, and at times even manipulative. Multiple and overlapping roles are being played by different players involved in the dates value chain. Lack of financing is also a major problem area that continues to restrict the industry's progress and requires attention simultaneously in addition to covering of other gaps.

Value loss of the crop due to damaging, post-harvest fruit handling and cultural practices is great. It is believed that awareness building alone would not solve the problems as many damaging practices are performed due to the existing industry dynamics. In order to put a stop to these practices, the industry dynamics need to be changed and for any significant amount of success, the entire supply chain needs to be developed in one go.

Project Initiative

The dates assistance program is designed to increase the quality and quantity of fresh dates compared to the existing product mix that is dominated by dry dates. This shift in focus will drive an incremental shift towards profitability by reduction in cost, improved productivity, and enhanced quality of fresh dates. The project has equipped around 45 Small and Medium Enterprises (SME) farmers and three dates processors with tools and processing machinery, required for quality dates processing. The three processors are being equipped with the latest processing and cold storage facilities enabling them to maintain high quality processing, storage standards and increased exports. The project entails the following major components:

- Workforce development, trainings, capacity building, processing infrastructure support, and market linkages are the major components of the Dates Value Chain development strategy.
- In-kind assistance to dates farmers including solar tunnel dryers, iron hand carts, plastic crates, plastic tables for drying, tarpaulins for water proofing and orchard sprayers.

- New market linkages.
- Cold storage facilities with backup generators for the dates processing units.

The Study

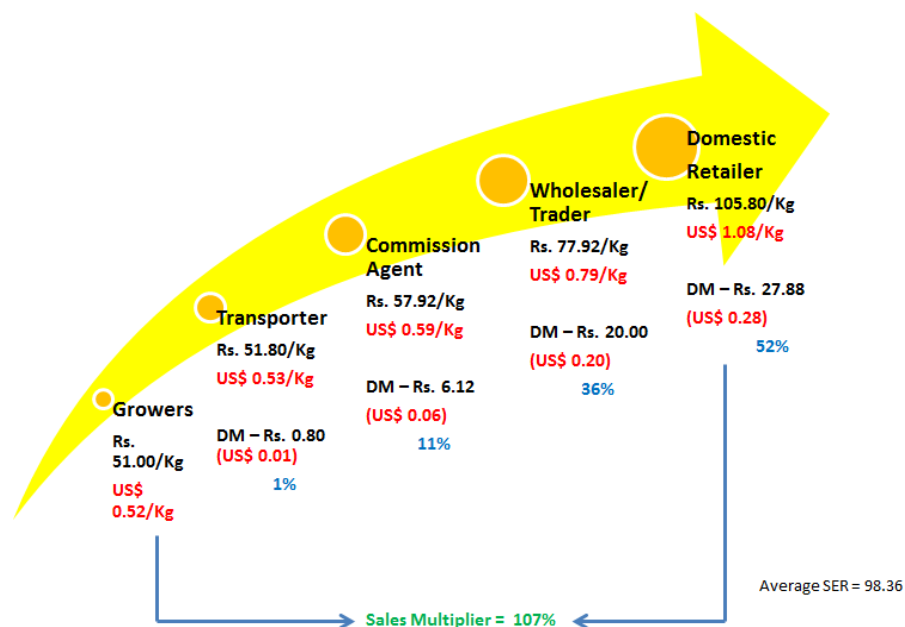
The overall objective of the study was to conduct a value chain analyses to measure the potential impact of the USAID Firms Project on the dates value chain. Information and data from different stakeholders in the dates value chain was collected and analyzed in order to calculate a multiplier for the change in sales and jobs with necessary assumptions.

A framework was designed by using the Strategy into Action (SIA) approach. In order to gather authentic information, interviews with various date growers and related value chain actors were conducted. In addition to this, visits to major wholesale markets were made.

Key Findings

As the dates move from farm to the end consumer, economic gains are generated at each stage of the value chain. There are some direct returns associated with the trade of the produce that result in the shape of margins. In addition, employment is also generated at each stage of the activity.

The following trend represents, five important value chain actors, and how cost drivers influence the final price at each actor level.



The table below elaborates the profit margins at each actor level involved in the dates value chain and costs involved at each actor level. Total cost of each intermediary was deducted from the gross margin to calculate the net profit margin.

		Date Farm		
		US\$/Kg	PKR/Kg	%
Retailer	Average Selling Price	1.08	105.80	
	Average Buying Price	0.72	71.00	67%
	Gross Profit	0.35	34.80	33%
	Other Costs	0.08	7.60	7%
	Net Profit	0.28	27.20	26%
Wholesaler/Trader	Average Selling Price	0.72	71.00	
	Average Buying Price	0.52	51.00	72%
	Gross Profit	0.20	20.00	28%
	Other Costs	0.07	7.19	10%
	Net Profit	0.13	12.81	18%
Commission Agent	Commission Earned	0.06	6.12	
	Gross Profit	0.06	6.12	100%
	Other Costs	0.03	3.06	50%
	Net Profit	0.03	3.06	50%
Transporter	Truck Rent	0.01	0.80	
	Gross Profit	0.01	0.80	100%
	Other Costs	0.00	0.43	54%
	Net Profit	0.01	0.37	46%
Date Grower	Average Selling Price	0.52	51.00	
	Average Cost			
	Production Cost	0.18	17.40	52%
	Harvesting Cost	0.06	6.24	19%
	Processing & Packing Cost	0.10	9.60	29%
		0.34	33.24	100%
	Gross Profit	0.18	17.76	35%
	Other Costs			
	Transportation	0.01	0.80	10%
	Commission & other charges	0.07	7.14	90%
		0.08	7.94	100%
	Net Profit	0.10	9.82	19%

On the basis of price structure, cost drivers and employment generation in the whole value chain cycle, labor and sales multipliers have been calculated. As these multipliers are calculated on a percentage basis, they can be applied to all the data, related to past, present or future. These multipliers are valid for the current value chain cycle and will be different in case there is some substantial structural change in the value chain system. These multipliers can be used for any increase in production.

Employment opportunities have been divided in two categories: on-farm and off-farm opportunities. Direct or on-farm opportunities involve operations being performed at the farm from the production stage till the produce is sold to the first buyer. Indirect or off-farm opportunities are those which are a result of operations starting from the point of purchase till the level that the produce is sold to the consumer, or sent to the export point.

Similarly, sales data has also been divided into two categories, i.e. direct and indirect sales. Direct or on-farm sales include total sales value of the produce received by the producer at the farm or the first selling point. The sales value of produce over and above the sale value of the producer is called indirect or off-farm sales. Indirect sales can be calculated by multiplying the direct sales with sales multiplier.

Conclusion

A study on the topic reveals that low dates productivity and quality in Pakistan is mainly due to traditional agriculture practices and poor harvest and post-harvest handling, which have been followed for decades, and it is a tough task to inculcate change in the mindset of date growers.

Ironically, all the focus of farmers and traders remains limited to making immediate sales. This way value added product portfolio remains off the shelf due to insufficient good agricultural practices and handling of produce, resulting in a short shelf life.

The USAID Firms Project has successfully trained dates farm SMEs in Sukkur and Khairpur under a revitalization program that aims to develop these SMEs and facilitate them in gaining access to greater revenues and market linkages; and make overall infrastructure improvements to strengthen the sector.

If the same model is applied to the complete dates sector of the country, overall economic impact will increase. It will benefit the growers and other related actors involved in the value chain. In addition, there will be noticeable growth in employment and economic gains for labor.

1. Introduction

1.1 Background:

Pakistan produced 557,000 metric tons MT (2011)¹ of dates annually. Dates are Pakistan's third largest horticulture crop and Pakistan is the sixth largest producer of dates in the world. There are approximately 8,000 SME farmers, eight-ten dates processing facilities, and around 110 traders in Khairpur and Sukkur districts, where the project works. Women make up to 70 percent of the dates processing workforce. Pakistan exported USD64 million in 2011 worth of dates, which is 5.45 percent of the total international date trade of USD 1.17 billion.

The dates sector is still struggling for increased share in terms of value compared to its main competitors, Tunisia, the U.S., and Egypt. Currently, due to unimproved facilities and practices, Pakistan is exporting low quality fresh and dry dates that prevents it from fulfilling the demand of high end markets. Supply-side constraints primarily exist at date farms and within processing facilities. The lack of processing machinery and tools, on-farm storage, cold storage, and access to finance are the major impediments faced by date palm SME farmers and processors, which results in poor quality, high waste, and dates contamination.

1.2 USAID Firms Project Initiative on Dates Sector Development:

The date assistance program has been designed to increase the quality and quantity of fresh dates compared to the existing product mix that is dominated by the dry dates in the market. This shift in focus will drive an incremental shift in profitability by reduction in cost, improved productivity, and enhanced quality of fresh dates. The project had equipped a group of 45 SME farmers and three SME processors with the on-farm tools and processing machinery that was required for quality date processing. The three processors were being equipped with the latest processing and cold storage facilities to enable them to maintain high quality processing and storage standards and increase exports.

1.3 USAID Firms Project's Focus: Dates Sector:

The USAID Firms project planned to assist 45 fSME farmers and three SME processors from Sindh. The projects entails following major components:

- Workforce development, trainings, capacity building, processing infrastructure support, are major components of the Date Value Chain development strategy.
- In-kind assistance to date farmers including solar tunnel dryers, iron hand carts, plastic crates, plastic tables for drying, tarpaulins for water proofing and orchard sprayers.
- Developing new market linkages for the farmers to sell their produce at better prices.
- Cold storage facilities with backup generators to dates processing units.

The dates business model addresses the constraints of dates farmers and processors with the Interventions below:

¹ Agricultural Statistics of Pakistan, 2010-2011.

Cost Sharing and Infrastructure Upgrading

In-kind assistance was provided to farm and processor SMEs through a cost-sharing mechanism. For contributing approximately USD 0.26 million to cost share, SME processor were provided with standardized food-grade plastic crates, plastic pallets, cold stores, forklifts, metal detectors and marketing/branding and packaging material designs. Processor SMEs are also required to get the HACCP (Hazards Analysis Critical Control Point) certification as part of their contribution to the program



Women make up 70 percent of the workforce at the date processing level, making the sector instrumental in the economic empowerment of women in Sindh.

Training and Work force Development

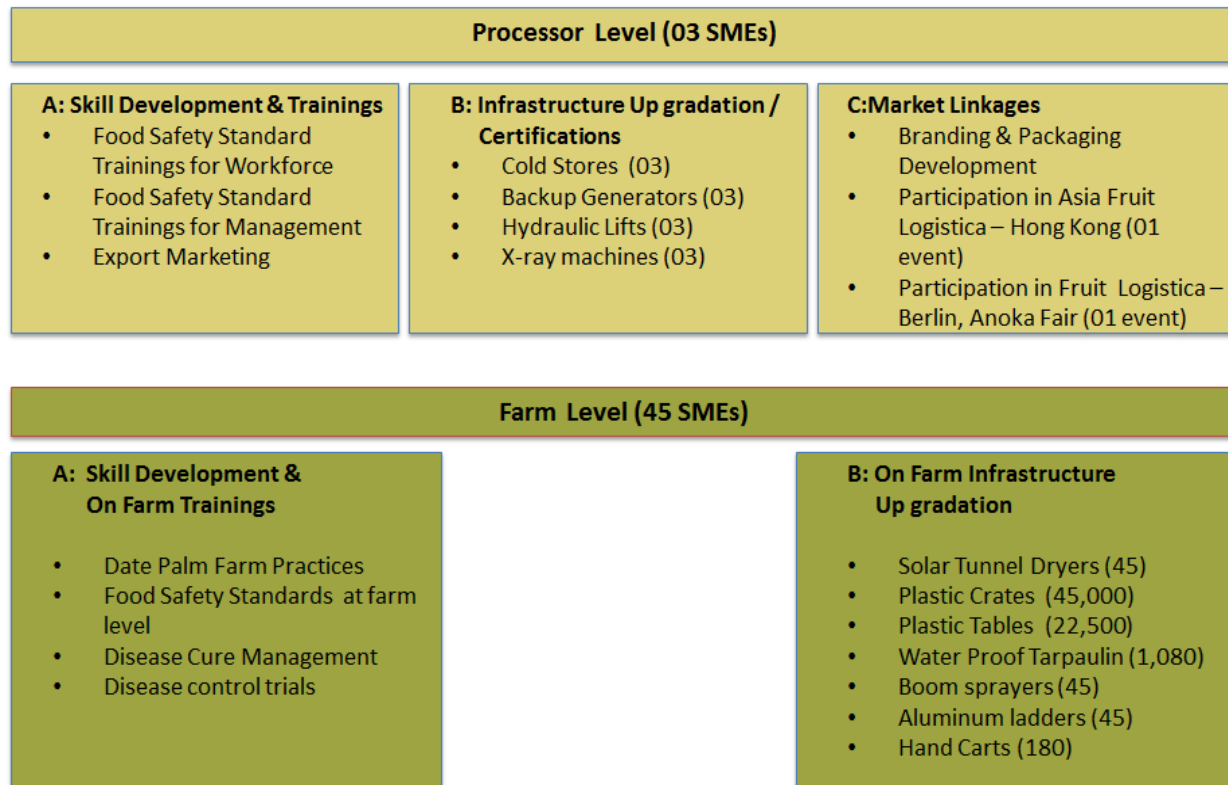
Technical assistance will increase profitability, improve quality and reduce wastage through training dates farm SMEs and their workforce on; on-farm practices, disease management and food safety standards. Trainings on food safety, export marketing and packaging, business communication, quality management systems and production management will be provided to dates palm processor SMEs and their staff.

Market Linkages

The program will assist processor SMEs in creating international market linkages through participation in international trade fairs to enhance their business outreach and to increase their product's visibility in the international market.

Key components of the USAID Firms project interventions are:

Figure 1: Key Areas of USAID Firms Project Interventions



- Farm-Level Constraints:** Improper post-harvest management by the farmers results in a high wastage ratio.
 - o Wooden boxes are used for storage and transportation of dates to the local markets, increasing the chances of damage to the product-, physical contamination and bacterial infestation. Lack of farm machinery and access to finances are also keeping the sector from realizing its full potential.
- Processing Level Constraints:** The dates processors lack experience and training in international business and export marketing practices.. Workers lack basic skills in quality control and food safety measures. Processing facilities are subject to financial and operational constraints and a major share of the international market remains untapped due to lack of exposure.

handling and lack of disease



Dates are traditionally dried in the open air causing bacterial infestation in the fruit and resulting in high wastage.

1.4 Impact of the USAID Firms Project Interventions:

USAID Firms Project undertook different interventions in the dates sector. The before and after scenarios of each intervention are presented below:

Figure 2: Solar Tunnel Dryers

Total No. of Installed dryers	45
Area	Khairpur and Sukkur Districts
No. of Farm Beneficiaries	45
Drying Capacity	03 - 05 Tons /cycle
Dryer components	Racks, trays, iron structure, UV sheet, Solar system, Temperature & humidity meters

**Figure 3: Iron Hand Carts**

Total No. of hand carts distributed	180 (04 to each beneficiary)
Area	Khairpur and Sukkur Districts
No. of Farm Beneficiaries	45
Loading Capacity	200 kg



Figure 4: Plastic Crates for Harvesting

Total No. of plastic crates distributed	45,000 (1,000 to each farmer)
Area	Khairpur and Sukkur Districts
No. of Farm Beneficiaries	45
Weight Capacity	18 kg - 35kg (03 different models)

**Figure 5: Plastic Tables for Drying of Dates**

Total No. of plastic tables distributed	22,500 (500 to each farmer)
Area	Khairpur and Sukkur Districts
No. of Farm Beneficiaries	45
Drying Capacity	23-25kg /batch

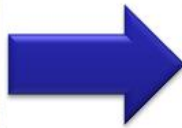


Figure 6: Tarpaulins for Water Proofing

Total No. of tarpaulins distributed
Area
No. of Farm Beneficiaries

1,080 (24 to each farmer)
Khairpur and Sukkur Districts
45

**Figure 7: Orchard Sprayers**

Total No. of Sprayers distributed
Area
No. of Farm Beneficiaries

45 (01 each)
Khairpur and Sukkur Districts
45



1.5 Challenges Faced by the USAID Firms Project:

Since its inception, the USAID Firms project faced many challenges and appropriate measures were taken by the project team to address these. A brief description is given below:

Managing SMEs' Expectations: The USAID Firms project had no prior existence in the Dates intervention area in Sindh, and hence it initially became difficult for the project to establish its credibility with the local date's producers. At the outset, the farmers were reluctant in joining hands with the project, but after extensive consultative workshops and sessions, situation began to normalize. The project teams convinced them that the trainings and knowledge sharing will be of great benefit for them and some tools and equipment would also be provided to the partner SMEs. Consequently, a majority of the dates producers expressed their interest to join the project activities

Mobilization of Resources: At the start, the project had poor networking in the area of intervention and so mobilization of resources remained a huge challenge. A group of four to five influential people from the area were identified during the consultative workshop, to lead on mobilizing the community. It is pertinent to mention here that the assistance provided, was totally unconditional and it was clearly communicated by the project team that the SME's will be selected on merit basis only.

.Selection of SME's: In the beginning, the producers were reluctant to become part of the program but subsequently, after looking at the benefits of the program, the number of SME applicants increased. The project conducted consultative workshops with 550 people out of which 60 filed applications of interest. A list of 45 was shortlisted after complete due diligence, to become part of the project.

Provision of Technical Equipment: The project provided customized on farm processing equipment and machinery, such as drying tables with perforated tops, solar dryers, etc, to address the needs of the selected beneficiaries. To ensure continuity of practice after the project closure, the equipment was prepared locally.

Ensuring equipment Safety. Portable on- farm equipment was provided to the SME's to ensure its safety and storage when not in use.

Usage of equipment supplied: The beneficiaries were provided with equipment User Manuals to help them better understand the tools and techniques of dates farming.

2. The Study

2.1 Purpose of the Study:

The aim of this study is to gauge the extent of date sector program's contribution to two of the most important areas of the USAID Firms Project i.e. increase in sales and increase in employment. The contributions to sales and employment will primarily stem from USAID Firms project interventions in the fresh and dry date value chain.

The overall purpose of this value chain study is to document the nature, context and the extent of the impacts realized in all aspects of dates value chain by estimating the increase in sales and employment (See [Annex -1](#) SoW of the Study).

2.2 Objectives of the Study:

The overall objective of the study is to conduct a value chain analyses to measure the potential impact of the USAID Firms Project on the dates value chain. For this purpose the value chain analysis will measure the forward linkages (source of inputs and destination of output) and determine the value-added to this sector.

The information/data from different stakeholders in the dates value chain was collected and analyzed in order to calculate a multiplier for the change in sales and jobs with necessary assumptions and qualifiers. This multiplier effect provides USAID a level of confidence for attribution of increase in sales and jobs to its interventions in the date sector. The study comprises of the following six objectives:

1. Define and document the Value Chains for the Dates sector in Pakistan.
2. Systematically document the USAID Firms Project's intervention in dates value chains.
3. Acquire information on the distribution of economic gains across the dates value chain by various players.
4. Determine the labor multiplier and sales multiplier equations with assumptions for the dates sector. These multipliers must be transferable for use by all stakeholders in the sector.
5. Determine specific enabling environment constraints that impact dates value chain specifically with regard to sales and employment.
6. Provide practical and realistic recommendations on how modification in the program interventions can create greater impact in generating sales and in creating employment.

2.3 Scope of the Study:

The USAID Firms project acquired services of a team of two qualified individuals as short term technical consultants i.e. Agricultural Economist and Business Analyst to appraise the economic impact of USAID Firms Project's interventions in dates value chain across Khairpur and Sukkur districts of Sindh, Pakistan. The consultants had to focus on the dates production areas within the province of Sindh while technical backstopping from the project's Lahore and Karachi offices for the majority of the study period. The consultants frequently travelled to other cities in order to interact with all the actors involved in Dates Value Chain.

The specifics of the study are outlined in the sections mentioned below, and is guided by the goals and relevant strategic objectives/intermediate results of the project, which are listed below:

Goal: Improved economic status of target populations

Program Purpose: Dynamic internationally and domestically competitive firms with accelerated sales, investment, and employment

Intermediate Result 1: Improved economic performance of target enterprises

3. Study Methodology

3.1 Methodology Approach:

To conduct the study in a systematic way, a frame work was designed by considering the Strategy Formulation Process (Strategy into Action or SIA). This approach was originally designed by Professor Arnoldo Hax of the Sloane School of Management MIT. The key contents of the frame work include Main Objective, Key Questions – Complex Variables, Simple Variables, Avenues of Exploration, Values, Methodology, Source, Assessment Instruments/Tools and Activity Area.

At first step, the main objectives were splitted into key questions (complex variables). Key questions explained the items to be covered in the respective objective of the study. These were further broken down into simple variables and avenues of exploration. These gave the details of the key items to be covered during the study. In order to gather all the related information, a methodology was developed which covered how and who will provide the specific data/information. It also explained what methodology to be adopted and tools to be used for the collection of the data/information. The locations selected for the activities were also mentioned in the strategy. Complete methodology frame work is attached as [Annex-2](#).

In order to move forward, following approach has been used to conduct the study:

- **Review of Reference Material**

All the relevant material, concept papers, proposals, baseline survey reports, M&E related documents, sales and employment trackers and project/strategy documents were reviewed to obtain the information regarding pre and post project interventions scenario of the dates sector, different components of the USAID Firms Project dates value chain development program, best practices adopted during the implementation of the program and achievements of each of the components of the program.

- **Meetings with Project Team**

Relevant project staff was taken on board to collect the required information and five meetings were held with the M&E team, senior management and other members of the project. The meeting were conducted to collect historical perspective on the inception, development and execution of the dates program, best practices adopted during the implementation and major challenges faced by the program since its inception and strategies adopted to address these challenges.

3.2 Data Collection:

For the purpose of collection of required information, dates farmers and dates markets at Khairpur and Sukkur and other major wholesale markets, at Karachi, Lahore and Faisalabad, were visited and interviews with related actors of date value chain were conducted. A brief description is as under:

- **Meetings with Date Farmers**

As the date harvesting and farm level processing activities had been completed before the visit of the dates producing area by the consultants, due to which on ground activities of harvesting and processing could not be witnessed and meetings with implementing partners/date farmers at Khairpur and Sukkur districts were held to get information regarding project interventions and their impact. Interviews of five date farmers were conducted to seek the required information regarding production/farm management practices and costs,

harvesting, grading & packing practices and to acquire other information needed for the estimation of economic gain and sales & labor multipliers for date value chain ([Annex-3](#)).

- **Date Processing Units**

Processing is an important activity to be undertaken for the export of fresh dates. There are about eight-ten 8-10 date factories established at Khairpur and Sukkur. Two date processing units, implementing partners of the project, were visited to get information regarding the price structure, cost drivers and labor used to perform different activities.

- **Wholesale Markets**

Dates, fresh and dry, are traded in fruit and vegetable and other wholesale markets in the country. Markets at Karachi, Lahore and Faisalabad were visited to study the date value chain, actors involved in the chain and their roles ([Annex-4](#)).

- **Dates Value Chain Actors**

Interviews of different actors of dates value chain, which include farmers, pre-harvest contractors, transporters, commission agents (Arhati), traders (Ladania), retailers, processors and exporters ([Annex-6](#)) were conducted. Information regarding price structure, cost drivers and labor performing different activities, at each stage of value chain, was obtained, to determine the distribution margin along the value chain and also to estimate indirect sale and employment generation.

- **Interview Guide.**

A questionnaire comprising of key questions were prepared and shared with the M&E team and relevant dates team members for comments. Their feedback was incorporated in questionnaire. All interview instruments were approved by the USAID Firm Project Management before they were used in the field. These key questions were used to collect information from different stakeholders of dates value chain.

3.3 Data Analysis:

The major objective of the study was to estimate the labor and sales multipliers. For the purpose, required information, regarding price structure, cost drivers and labor used to perform different activities at each stage of the value chain, was obtained from all the actors across the value chain which includes input suppliers, producers, pre-harvest contractors, harvesting/packing labor, transporters, commission agents, traders, wholesalers and retailers.

For the purpose of analysis different type of information regarding costs, prices and labor use was required which included:

- Production, harvesting, transportation and labor costs.
- Price of different produce grades and packaging at different levels of value chain.
- Labor use required to perform different activities at each stage of value chain.

It was a difficult task to decide which particular information, of a specific variable, should be used as it was not a statistical analysis in which data from a large sample is collected and used for the purpose. Further there was a large range of information under each category of information mentioned above.

To get representative information, to be used in the analysis, all the stakeholders of value chain were interviewed through questionnaires, comprising of key questions, approved by the M&E Director of the USAID Firms Project. Information of one source was verified from the other source. Some information was time specific like price of produces where the prices varied at

different points of time. Similarly, there was no standardization in the grades and packing size of a produce which made the situation more complex. Every producer was preparing different grades of produce depending on the quality of produce and targeted buyers. This aspect was covered by obtaining such information from different primary and secondary sources. On the basis of whole information collected during field visits and obtained from various other sources, a representative information was estimated which was used for the purpose of analysis.

3.4 Limitations of the Study:

Calculating final figures, which were used in the analysis, particularly in case of production costs, grades of produce and their recovery ratios and prices of different grades of produce, was an issue faced during the study due to absence of grading/packing standards and wide range of information under each category.

At the time of visits to dates producing areas of Khairpur and Sukkur, the harvesting and on farm processing activities had been completed so ongoing activities could not be witnessed and the required information was only obtained from the date farmers and other related actors of the value chain.

Although there were no serious security issues but movement of consultants to the field areas was restricted due to deployment of army in the area and field work was wrapped up before the planned date.

In order to utilize the model, certain information such as marketing strategies, baseline details related to costs of production needs to be collected beforehand. This model was applicable to two types of the marketing strategies. If another type of marketing strategy were to be added, the model would have to be updated accordingly.

3.5 Study Period and Timelines:

The study commenced in July 2013 and was completed in November 2013.

4. Date Value Chain in Pakistan

4.1 Global Picture:

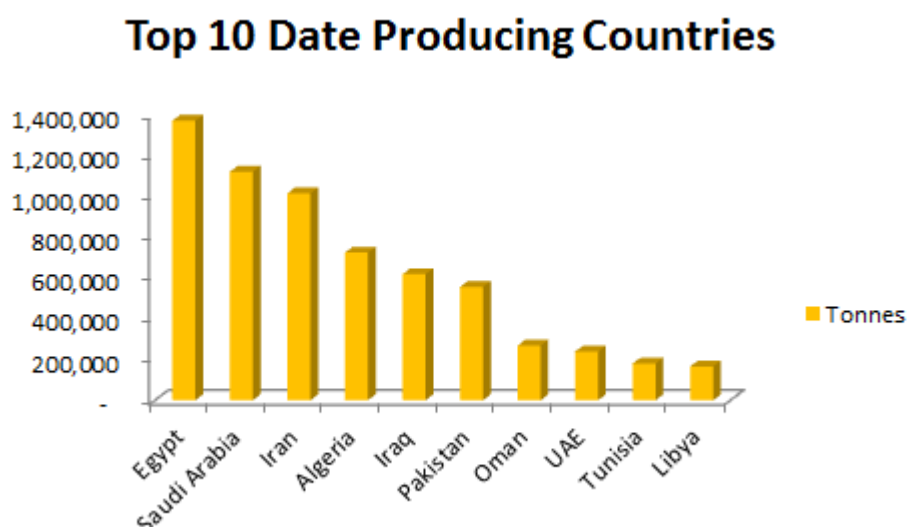
Date fruit is produced primarily in a hot and dry climate with the main production areas in South West Asia (mainly the Arab) and North Africa, with Middle East and other dates producing Asian countries like Pakistan and Iran collectively contributing towards two thirds to the world dates production. The date belt stretches from the Indus valley in the east to the Atlantic in the west. A very small amount is produced outside of these regions and the U.S. is one country which has a presence in this industry albeit a very small quantity.

Production

The date fruit is marketed all over the world not only as highly nutritious fruit but also as a high value ingredient for confectionery and pharmaceutical raw material. At the same time, the fruit remains an extremely important subsistence crop in most of the desert regions. During last decade global production of table dates has shown a slight increase of nine percent from 6.7 million tons in 2002 to 7.3 million tons in 2011². In 2011 the top six date producing countries were Egypt, Saudi Arabia, Iran, Algeria, Iraq and Pakistan, accounting for about 66 percent of total production. If the next six top producing countries are included, i.e. Oman, United Arab Emirates, Tunisia, Libya, China, Mainland and Morocco, then this percentage will rise to 89 percent. This clearly indicates that most of the world's date production is concentrated to a few countries. If we look at the regional scenario, we find that Asia has a maximum share of 62.27 percent in production followed by Africa with 37.23 percent, North & South America 0.34 percent and Europe 0.16 percent.³ Region Wise Break-up of Date Production in the World is as under:

International trade in dates is volatile. Changes in export quantity and value are often associated with political and economic instability in the main producing countries. Unexpected weather changes can also lead to production and storage losses.

Figure 8: Top 10 Dates Producing Countries



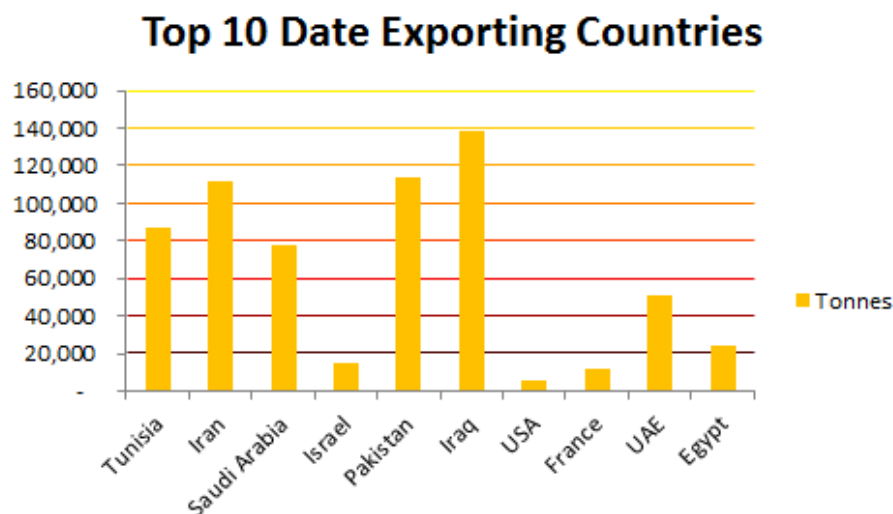
² FAOSTAT

³ FAOSTAT

Exports

Top six dates exporting countries, with respect to value; include Tunisia, Iran, Saudi Arabia, Israel, Pakistan and Iraq. Although Iraq, with 138,437 MT, and Pakistan, with 113,358 MT, are leading in exports, with respect to quantity, but due to lowest export prices of USD 338/MT (Iraq) and USD 565/MT (Pakistan), among the top 20 dates exporting countries, Pakistan and Iraq are placed at No. five & six respectively, with respect to value. This is unfortunate that the top dates producing and exporting countries fetch the lowest export prices. If we see the scenario of export prices we find that during 2011 Italy fetched the highest export price of USD 6,117/MT followed by the U.S. with USD 5,941/MT and Israel with USD 5,877/MT. This huge variation in export prices can mainly be attributed to varietal selections, production management, harvest and postharvest care, processing practices, meeting international standards and marketing & branding efforts.

Figure 9: Country wise Average Export Volume



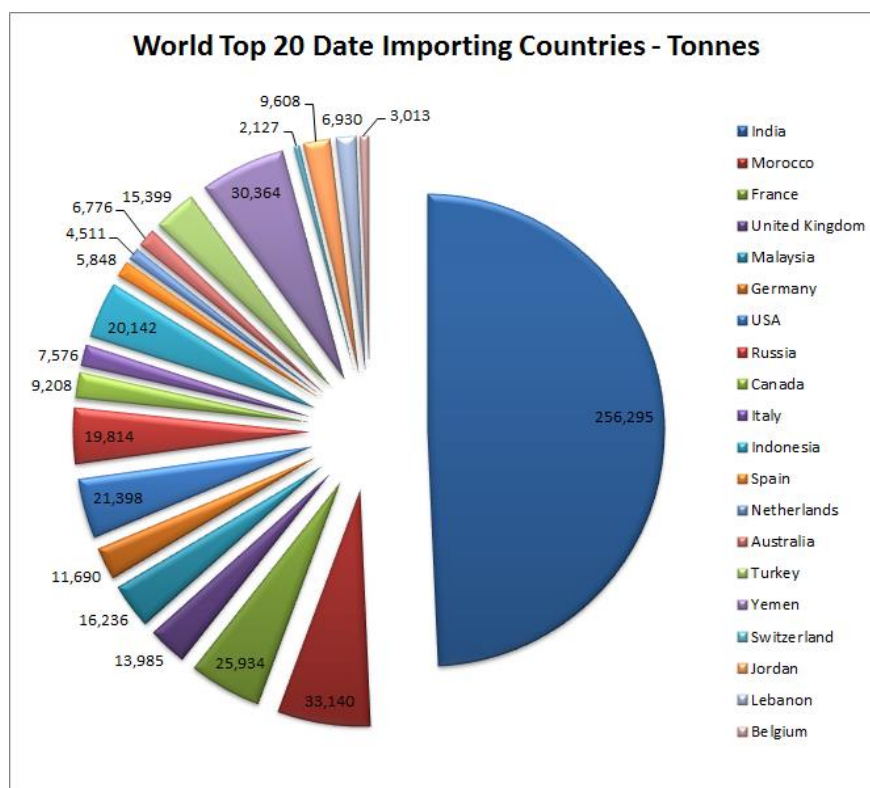
Imports

Dates fruit has very vast acceptance in international market and due to its less perishable nature and long storage life, is traded throughout the year. Peak season for date consumption is during the month of Ramadan. Entire Muslim communities, around the world, are loyal consumers of dates. Its consumption is also quite high during Christmas. Similarly, the fruit enjoys enormous significance on the occasion of Diwali and other religious and cultural festivities. In Europe and North America, the fruit is particularly preferred during the dark winter months. Usual sales of dates are spread to a period from October to April. With advancements in food technology, newer and very useful date products are being developed, indicating fruits' bright future. Dates have found their way into sweets, confectionery, chocolates, baking products, preservatives, salads, sauces, and breakfast cereals. Dates also have bulk industrial uses. European Union (EU) is a key market for dates exporters. Although the EU import of dates has a small share in world imports in volume, they account for higher share in value. This reflects the fact that EU import prices for dates are comparatively much higher than the world average. Countries such as France, United Kingdom, Germany, Italy and Spain are the major EU importers of dates in volume⁴.

⁴ Dates world productions, by [Nusantara Plantations Sdn Bhd](#), CEO & Founder at Nusantara Plantations Sdn Bhd on Mar 12, 2013

Top five dates importing countries, with respect to value include India, Morocco, France, United Kingdom and Malaysia. India leads with respect to both quantity and value, with 256,295 MT valuing USD 141,713 thousand. Major part of Indian import includes dry dates, imported from Pakistan, for use in religious ceremonies.

Figure 10: World Top 20 Date Importing Countries



4.2 Pakistan Date Sector – An Overview:

Pakistan is the sixth largest producer of dates in the world having a share of about 7.6 percent, with annual production of 557 thousand metric tons (2011)⁵. Over last two decades, an increase of 23 percent has been observed in area under dates plants while the production has remained almost stagnant at the same level, with some ups and down (maximum production of 630 thousand MT was observed in 2001-02). No increase in production was witnessed, despite an increase in area, was mainly due to sharp decline in production, from 399 to 202 thousand MT (49 percent), in Balochistan, over the period mentioned above⁶.

Sindh and Balochistan are major dates producing areas in Pakistan having 90 percent share in total production (Sindh – 54 percent & Balochistan - 36 percent). While Punjab and KP have eight percent and two percent share respectively⁷.

The main areas where dates are produced in the country include: Sukkur and Khairpur districts in Sindh; Turbat and Panjgur in Balochistan; D. I. Khan in KP, and southern districts of the Punjab. Out of the 300 varieties of dates produced in Pakistan, Begam Jangi of Balochistan, Aseel of Sindh and Dhakki of Dera Ismail Khan are the varieties much sought world over due to

⁵ FAOSTAT

⁶ Agricultural Statistics of Pakistan, 2010-11.

⁷ Agricultural Statistics of Pakistan, 2010-11

their exotic taste, but due to lack of processing and packaging facilities these highly valuable varieties do not fetch their real worth in the export market⁸.

Although, as mentioned above, the dates are produced all over the country, with major share of Sind and Balochistan, this study covers date production in Sind, being the focus area of Project activities.

In Sind, Sukkur and Khairpur are the dates producing districts having about 8,000 SME farms, eight to ten date processing facilities and two dates markets. From 1993 to 2012, area under dates plantation in Sind increased by 84 percent while production increased by 257 percent⁹. This higher increase in production, against the increase in area, can be attributed to the improvement in yields which highlights the potential of the area. At the time of harvesting of this fruit khairpur district becomes the hub of the business activities as the first trade of the produce takes place in the dates markets established there. Traders and retailers, from all over the country, visit the area to purchase the required quantity of the produce to meet the requirement of the whole year. It creates a lot of business activity and generates new employment opportunity in the area.

Storage: Dates have very good storage life and it can be stored for more than a year under normal storage conditions. This is a common practice of traders, wholesalers and retailers to purchase the produce in bulk and place it in the cold stores. They keep on selling the produce throughout the year as per market conditions.

Exports: Pakistan made its entry into the world dates market during 1982-83 for the first time when because of the Middle East situation it became difficult for some countries to obtain dates from Iran and Iraq. Earlier, Pakistan had been exporting only dried dates in limited quantities¹⁰. In 2011 Pakistan exported approximately 113,358 MT of dates, worth of USD 64 million¹¹. Pakistani dates fetch low price in the international market, mainly due to quality issues. Major export markets include India, Afghanistan, Australia, Canada, Denmark, Germany, China, Japan, USA, UAE and UK. Pakistan's largest export markets for fresh and dry dates are USA and India respectively. Export of dry dates, in terms of value, dominates the trade with 92.61 percent share against 7.39 percent of fresh dates (2008-09)¹². Fresh dates fetch better price as compared to dry dates in the international as well as in the local markets. There is no direct export to high value niche and retail super markets because of not meeting the required quality standards and certifications. This is fortunate that, although at low prices, the inferior quality dates also have good acceptance in the international for industrial uses.

Presently, date growers in Pakistan are using traditional methods to manage the entire production cycle. There is almost no use of agricultural technology, modern farming tools, dates dryers and basic product safety standards at farm level.



Traditional method to handle the dates

The fruit is harvested and transported to makeshift processing facilities using outdated methods resulting in huge losses at this very early stage of value chain. In a pack house, the fruit is separated from the bunch and is either directly spread on the field to sun-dry or is boiled and then put on the field to be sun-dried. The fruit that is put directly for sun-drying becomes semi dry soft dates whereas the fruit that is boiled turns into hard dry date called "*Chohara*" in local (URDU) terminology.

⁸Source: Article in Daily Times

⁹Source: Agricultural Statistics of Pakistan 2011-12.

¹⁰Source: Article in Daily Jang

¹¹Source: FAOSTAT

¹²Source: Fruit, Vegetables and Condiments Statistics of Pakistan – 2011-12 and SOW of the study

“Chohara” has better shelf life as compared to semi dry dates but has a limited market. India is the main, and probably the only, buyer of dry dates. The prices of dry dates are also quite low. The reason why growers opt for converting their produce into dry dates is that dry dates are more tolerant to rain and since dates harvesting coincides with the monsoon in Sindh, the fruit is susceptible to damage due to rains. In order to avoid this risk, developed date producing countries use technology based on dehydrating techniques instead of sun-drying, which is what needs to be replicated in date sector in Pakistan.

Factors leading to low price are poor quality, inappropriate handling and packaging, not meeting required standards and insufficient marketing and branding efforts.

4.3 Popular Varieties of Sindh Dates:

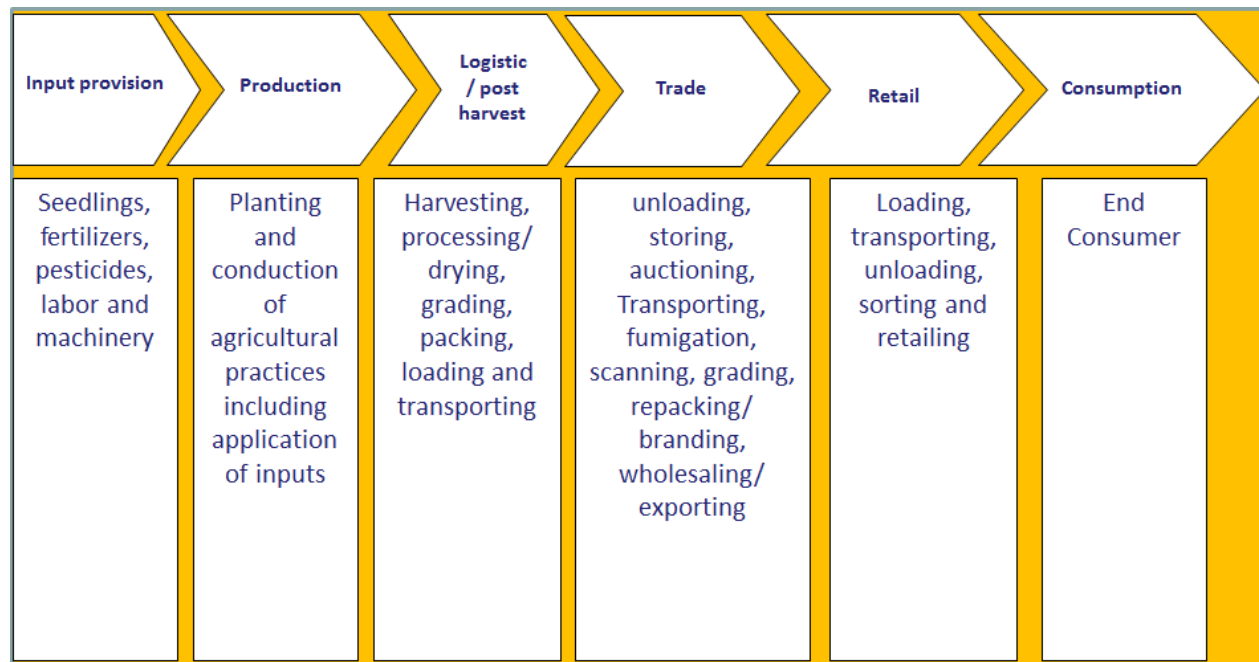
In Khairpur district alone there are 200 varieties of Date Palm grown in the whole region. They are popular with different names. Some of them are as below:

Dedhi, Aseel, Asul, Kurrh, Nakul, Gajar, Patasho, Pathri, Noori, Dhakki, Narro, Eidan Shah Jo Kuprro, Began, Otakin, Khorri Wari, Thothar, Toto, Khurmo, Sawrro, Mithrri, Kasho Wari, Luhar Wari, Achi Gajar, Surmit, Halwaen, Kotaen, Sakhanin, Dahota, Barmo, Ahmed Wari, Piper Wari, Allahen, Ghuri Wari, Taar Wari, Khurmit, Indrri, Badamen, Boobak, Ashrafi, Allah Bakhsh Wari, Sanhi Chapar, Koonj, Dodi, Golrri, Phoopher, Gharrhi Ashrafi, Shabihan, Warangi, Shah Wari, Bahar Wari, Jammu, Mohani Wari, Poong, Sobhari, Kazen, Khahnyanin, Jalebi, Gorrho Misri, Haji Wari, Thorri, Hakim Wari, etc.

4.4 Dates Value Chain:

Dates Value Chain encompasses the full range of activities and services required to bring the produce from farm to sale into the final markets whether local, national, regional or global. Value chains include input suppliers, producers, market actors, processors and buyers. They are supported by a range of technical, business and financial service providers. Value chains have both structural and dynamic components. The structure of the value chain influences the dynamics of firm behavior and these dynamics influence how well the value chain performs.

A value chain outlines the physical flow of production and commercialization and enabling national and international institutional environment needed for an effective value chain development (contextual issues like trade agreements, national policy and regulatory environment and supporting markets, research and training and assistance). Roughly we can distinguish two types of chains; chains in which coordination is undertaken by buyers – ‘buyer driven’ and those in which producers play the key role – ‘producer driven’.

Figure 11: Mapping of the Dates Value Chain

The value chain has benefits for both rural producers and urban consumers. Most goods are produced by a sequence of interlinked actors and activities. Producers are perhaps the most apparent aspect of the value chain and are thus given special emphasis. Traders are equally important but they do not receive the same importance as producers enjoy.

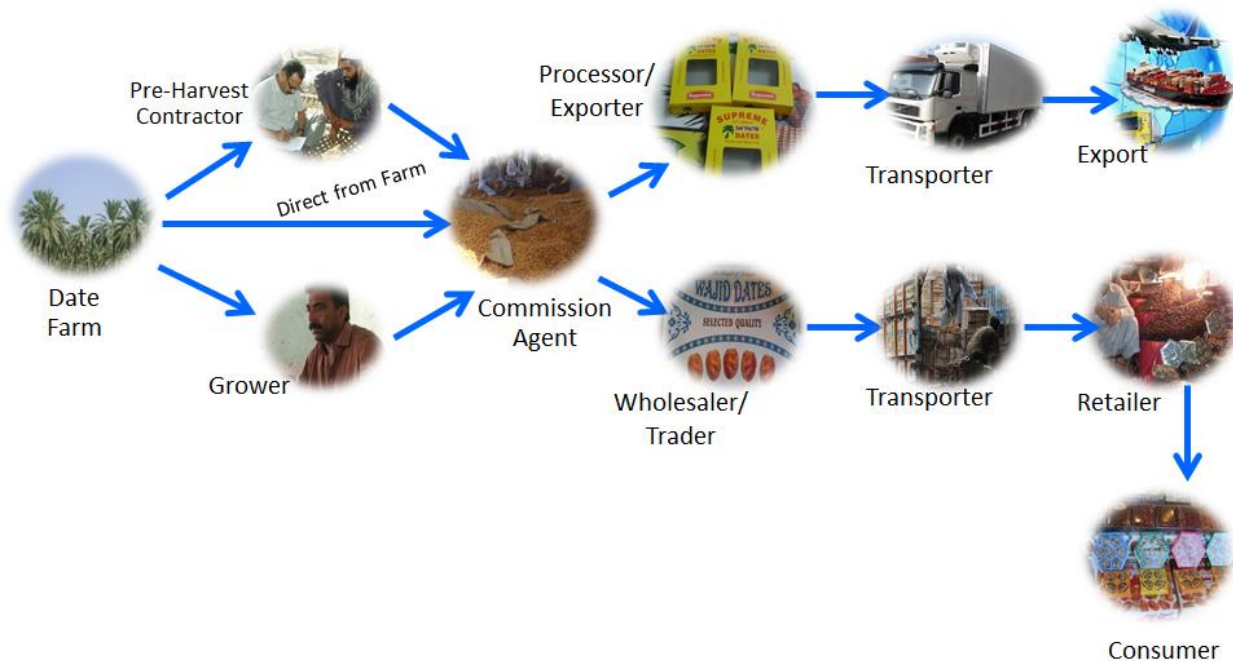
A value chain also acts as a supply chain – one in which the actors know each other well and form stable, long-term relationships. They support each other so they can work together to increase their efficiency and competitiveness. They invest time, effort and money to reach a common goal of satisfying consumer needs. That enables them to increase their profits.

At each stage of the chain the price of the produce escalates because each actor in the chain adds to its value – by growing, harvesting, sorting, grading, packaging, processing, labeling, transporting, storing, and putting it on shelves for buyers. Each of these steps costs money, which the actor recoups by charging for the service.

The date value chain includes suppliers input, date growers, pre-harvest contractors, transporters, commission agents, wholesalers, traders, cold store owners, retailers, consumers, exporters and processors.

4.5 Key Actors Involved in Dates Value Chain and their Functions:

Figure 12: Key Actors of the Date Value Chain



A brief description of these actors, their roles and position in the value chain is given below:

Input Suppliers

Input suppliers play a significant role in the production of healthy and disease free fruit by supplying agro-chemicals, fertilizers, pesticides, weedicides and other material required for better yield and higher quality of fruit production. Most of the producers express their dissatisfaction over the quality of products and services of the majority of agro-chemical suppliers.

Dates Producers

Producers undertake the production activities to the next level. As, mostly, the producers are short of finance which they need for production and allied activities, which include harvesting, processing, drying and marketing, they approach the commission agent for this purpose. The agent provides the required finances to the producers for two reasons. Firstly, he ensures the final sale of the produce through him on which he charges commission and secondly he charges a mark up on the amount of finances provided. Varily, some of the producers sell the harvesting rights of their orchards to contractors. Majority of the farmers are self involved in production and marketing of dates while some of them also sell the standing crop to the PHC. Time of sale of date orchards to the PHC starts immediately after harvest and the process continues till the harvesting season is close. Price of standing crop is estimated on per plant basis which, usually, are 80-100 in an acre. Price of a plant ranges from PKR 1,000 to 1,800, depending upon the crop condition, variety, time of sale and payment terms. Reasons for selling the orchard include immediate cash needs by the producer for the preparation of orchard for next season and to meet other personal expenses, risk factor, avoidance of hassle involved in self-marketing and not having the expertise in dealing with the labor and marketing of produce. The growers may not receive the full amount of the contract price agreed. Failure in payments

to grower is quite frequent for one reason or another. In particular, adverse weather conditions during harvest offer a reason for contractors to delay payments or to get some discount.

Pre-harvest Contractors (*Bekhar*)

The pre-harvest contractors (PHC) perform a key role in the marketing of fruits. Usually, they maintain a close contact with the commission agents in the date market as well as with the producers. While contracting an orchard, the PHC estimates the total volume of production, on the basis of area and total number of plants and make an assessment of expected costs to be incurred for supervision, harvesting, processing, packing, transportation, and marketing. The requirements for own domestic consumption, and payment in kind to the orchard-owner plus pre and post-harvest losses, are also the factors kept in mind by the PHC before making an offer to the producer. Finances for payment to the producer is obtained from commission agent and he is also taken into confidence regarding expected production and price of orchard before finalizing the deal. The pre-harvest contractors operate in a climate of uncertainty and encounter all sorts of risks as they are solely responsible for the loss.

Harvesting Labor

As the date plant is, usually, high enough, harvesting of fruit from the plant involves some special climbing skills. The function of harvesting is performed by the *climber* called "*chara*" in local language. The total labor works in the form of a group. In addition to *chara* it includes labor performing the functions of transporting the produce to a central place, picking of fresh dates from the bunch, processing, spreading the fresh and processed dates for drying and in the evening collecting the same and next morning again spreading it for drying. The process of drying continues for about five to six days. After drying the fresh dates are packed in crates and dry dates in jute bags. Each category of the harvesting labor is paid according to the skill required for its specific job. *Chara* and processors are paid the maximum remuneration..

Transporters

Transporters are service providers and they do not own the produce. They transport the produce from the point of production to the dates market and from the dates market to the destination (city/market). Common mode of transport for transporting the produce from farm to the dates market is tractor trolley or vans and from the dates market to the destination market/city, used for domestic marketing, is truck having different loading capacities. Different from other fruits, first trade of produces takes place in the dates markets established in the producing areas of Khairpura and Sukkur, from where the produce is transported to all parts of the country.

Commission Agents (*Arhti*)

Commission agents have a vital role in the value chain and perform the important function of linking sellers. They have establishments at wholesale markets, equipped with telephone and other communication facilities. They also provide food and lodging facility for the suppliers, if they consider it necessary. They perform their activities on commission basis, and do not, normally, accept title of goods.

The other important role, played by the commission agents, is providing finance to the producers/PHCs with the condition to sell their produce through them. Mark up, on the amount financed, is also charged. Sometimes the advance amount is not recovered or the PHC may cheat the commission agent but the main interest of the agent is in the commission charged from the supplier at a rate of about six-to-eight percent of the sale value of produce which is quite a handsome amount and covers all risks.

Traders (*Ladania*)

First trade of the produce takes place in the dates market established in the producing area. Traders from almost all parts of the country visit the dates market during harvesting season (July-August) to purchase the required quantity of dates produce and take it to the destination city/market where it is placed in the cold stores. In some cases traders mix the different categories of the produce to make their own brand, repack it in smaller packs, usually of 10 kg each, and then transport to the destination place, mostly to large cities where it is further sold to the retailers coming from small cities.

Retailers

Retailer is the last link of the domestic marketing chain, where market activities relevant to the marketing of dates for consumption, come to an end. They make their purchases of required quality and quantity mostly from the wholesalers/traders and take it to the destination city for onward sale to the consumers. The quantity and quality depends on their business volume, selling place and type of customers. The retailers sell the produce on established shops where large variety of dates, local as well as imported, is offered for sale. One can also find different types and brands of dates, in smaller packs of one and half KG, in citya departmental stores.

Processors/Exporters

Processing of dry dates takes place at the farm level, by the labor involved in the process, and the produce is further marketed for domestic as well as for export market. Fresh dates are picked, dried and packed at the farm level from where the produce is sent to the local market, for onward sale to the buyers, or is directly sold to the processors. For export of fresh dates role of processor is very important as the produce has to pass through further processing before it is exported. Processing of fresh dates includes pitting, sorting/grading, fumigation, processing (cleaning), metal detecting, packing/filling and loading. Processing units are established in the producing areas and majority of the processors are also exporters. Processors also supply processed produce to the exporters, not having the facility of processing.

Pakistani dates, dry as well as fresh, have very wide acceptance in the international market. Pakistan exports about 20 percent of its produces annually. Major share in the export is of dry dates and India is the largest importer of the Pakistani dry dates. In case of fresh dates the U.S. is the largest importer. Exporters play very important role by channelizing the produces to the export markets, stabilizing prices in domestic markets and earning foreign exchange for the country.

4.6 Characteristics of Date Market:

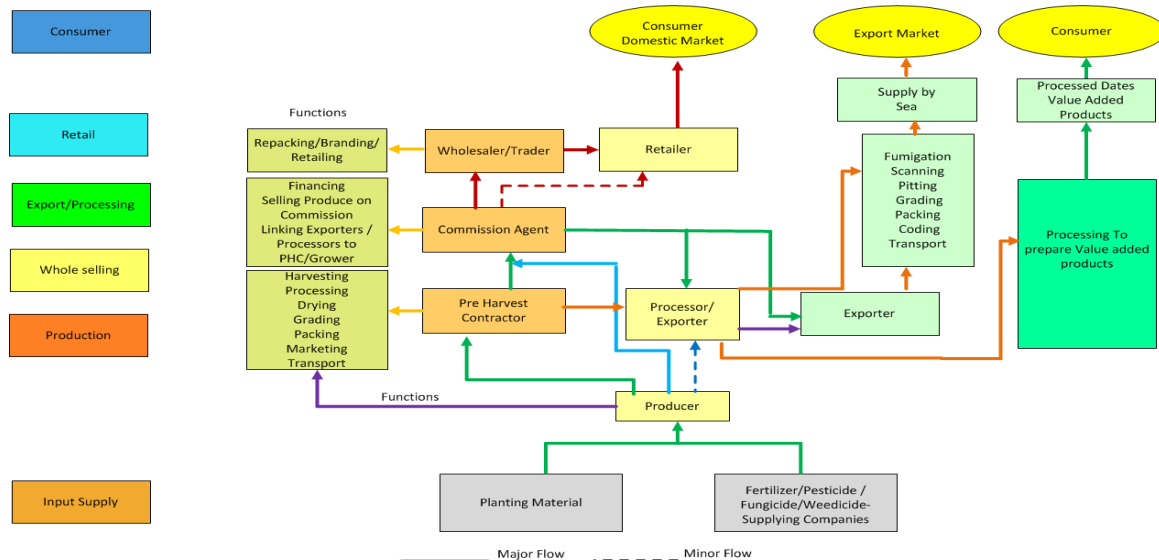
- Dates are available for human consumption throughout the year.
- Poor infrastructure, weather threats, limited knowledge of handling, processing, drying, curing and grading and very limited branding.
- Women participation in the drying, sorting/grading and processing is very high (women makes up to 70 percent of the processing workforce).
- A very small proportion of the dates are processed into value added products such as dates syrup, shakes, sweets and bakery products.
- 80 percent of the produces is purchased by consumers during Ramzan.
- Pakistani dates fetch a low price in the international market due to quality issues.
- Poor market linkages and inadequate branding efforts.

- Limited research work, done on dates, is not properly disseminated to date growers due to ineffective extension system.
- Sanitary and Phyto-sanitary issues at farms and processing level.

4.7 Dates Sub-Sector Analysis and Development:

Pakistani dates flow through multiple channels before it reaches the consumer or the processor and exporter. A diagrammatic presentation of multiple channels explaining the flow of product is given below:

Figure 13: Dates Sub-sector flow



4.8 Competitive Issues of Dates Value Chain

Farm Level

- Non availability of reliable input supplies.
- Research and development work done on dates production and handling is not properly disseminated to dates growers due to ineffective extension system.
- Conventional handling practices
- Unhygienic/ traditional drying methods with absence of proper tools
- Improper product storage and packing (on farm)
- Little conversion of producesinto fresh dates due to weather threats.
- Lack of modernized farming tools

Processing Level

- Lack of access to international best practices (quality and food safety)
- Unavailability of cold storage facilities in Khairpur
- Inadequate process management capabilities
- Lack of modern/advanced processing machinery

Marketing/Export Level

- Inadequate export management capabilities
- Limited exposure to international platforms
- Sanitary and Phyto-sanitary issues.
- Pakistani dates are generally delivered in inferior and inconsistent quality which fetches lower price as global markets are more conscious about quality standards of the product.
- Sustainability of dates exports to international market would be at stake unless and until Pakistan effectively shows compliance to quality and safety standards.
- Lack of modern product packaging and designing
- Lack of required certifications
- Products are is graded and packed in a traditional manner and no standardization exists.
- Almost no branding efforts.
- Poor marketing strategy.

4.9 Enabling Environment Constraints

There are a number of constraints within the dates value chain. Some of the key constraints are:

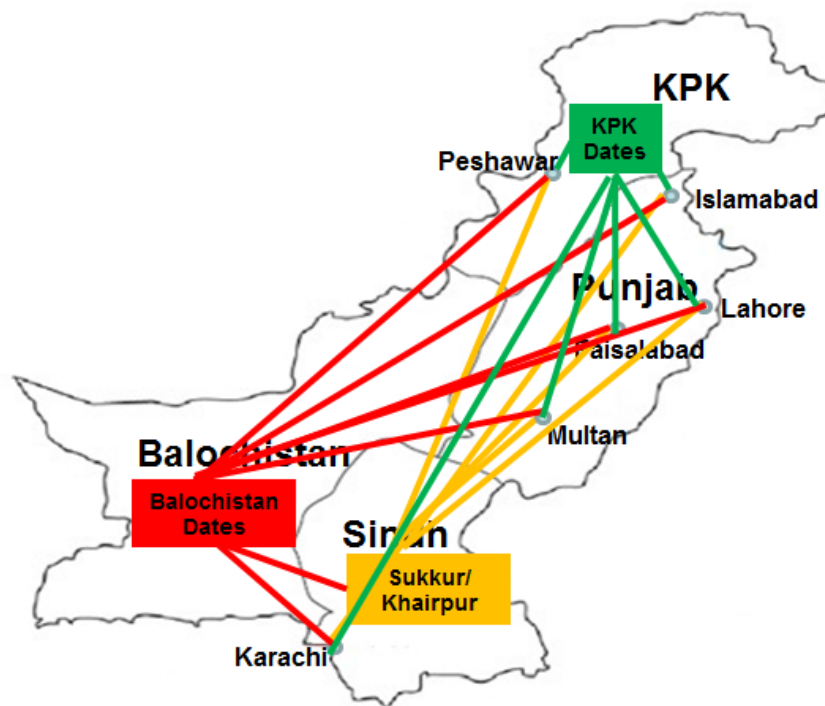
- Non availability of reliable input supplies – Majority of the farmers complained about adulterated or sub-standard input supplies (fertilizers & pesticides), which badly affects the quality and production. In addition planting material, available in the area, was also reported to be unreliable and not true to type.
- Non availability of any technical advice on GAP – Dates growers were observed to be adopting cultural/production practices which they have learned from their forefathers. Role of any Government Department/Agency, in the dissemination of latest research on the subject, was not found to be visible.
- Producer dependency on commission agents due to non-availability of any formal and affordable credit facility.
- Limited branding efforts & lack of promotional activities in international markets.
- Little efforts for varietal improvement of high economic value.
- Limited research work on preservation and storage issues (perceptions regarding adding oil to the fresh dates).
- Non existence of alternate marketing channels – Almost total produce is dumped in the wholesale markets, due to non-existence of alternate marketing channels, which results in overburdening of markets, lowering their efficiency and, sometimes, crash of prices.
- Little efforts with respect to marketing linkages – local as well as export.
- Weakest position of the grower in the marketing chain.
- Fixation of unrealistic retail prices by Government during Ramazan.
- Export procedure issues – one window operation required.
- Non availability of proper dates market with all required facilities.

Necessary policy measures are required to be taken by the Government to remove the enabling environment constraints, as highlighted above.

4.10 Geographical Flow of Date in Pakistan

Sindh, Balochistan and KP are the three main date producing areas in Pakistan. But for this study only Sindh dates (Sukkur/Khairpur) has been considered.

Figure 14: Key Date Producing areas and flow of dates



Reasons of Geographical Flow of Dates in Pakistan are:

- **Dates Production for consuming areas:** To meet the demand in consuming areas dates are marketed from the areas of they are produced in
- **First Trading Point:** In Sind, the first trade of dates takes place in the dates marketsof Khairpur and Sukkur from where it is transported to other parts of the country.
- **Price:** Price in the possible destination markets is the major force behind the decision of the trader regarding the market to be targeted.
- **Major markets:** produce is mainly purchased by the traders from major markets & further marketed to the surrounding smaller markets.
- **Points of export:** Dates are a major export item (about 18 percent of the dates produce is exported annually), it affects the flow of produce from producing areas to export points.
- **To meet demand during Ramzan:** 80 percent sale of fresh dates takes place during Ramzan. It increases the flow of dates from major trading areas to the consuming areas.

- **Quality aspect:** Premium quality produce is marketed to large cities, keeping in view the paying capacity and preference.
- **Processing & storage facilities:** Availability of processing & cold storage facilities also affects the flow of produce.

4.11 Critical Factors that Influence the flow of Dates

There are numerous factors, which influence the flow of dates through multiple channels and to different market destinations, local as well as international. A brief description of these factors is given below:

Market Dynamics

Trade of fruits and vegetables takes place in wholesale markets, mostly established under public set up, but is dominated by the commission agents, traders and wholesalers. Commission agent occupies a central place and is most influential player in the value chain. Production, harvesting, post-harvest and marketing systems are poorly developed and returns are distributed quite unevenly, with a maximum share for middlemen leaving small amount for the producers.

In domestic marketing, majority of the produce are routed through the traditional “*mandi*” system and alternate supply channels are almost nonexistent which leads to overburdening the markets and thus lowering their efficiency. Whereas in developed countries situation is different and only a part of the produce is traded through the established markets and remaining part is routed through the alternate supply channels. Grades and standards of produce for its domestic marketing are either nonexistent or not implemented. Due to this price, comparisons are difficult and market performance cannot be evaluated. Flow of reliable market information is poor which makes it difficult for the market players to formulate an appropriate marketing strategy.

Stakeholders

There are different stakeholders in the date value chain and every stakeholder has a specific role to play. The performance of value chain, which determines the flow of produce is the outcome of behavior of all the stakeholders. These stakeholders include input suppliers, producers, pre-harvest contractors, harvesting and processing labor, commission agents, traders/wholesalers, processors/exporters, transporters, cold store owners and retailers. The role, functions and position of different stakeholders of dates value chain has already been discussed in the above sections.

Consumption Pattern

Dates are not a common table fruit and its consumption is specific to different occasions. About fifteen days before the start of Ramazan, trade/sale of fresh dates increases, which are used throughout the Holy month of Ramazan. Dates are also used to prepare different dishes on the occasion of Eid (a Muslim festival). Use of dry dates in the marriage ceremonies is a common practice which also increases its trade. These consumption patterns also play a role in the flow of these produce.

Climatic Conditions

Climatic conditions also influence the date production, its quality, trade and flow. Conversion of produce to fresh dates is affected by the unfavorable weather conditions. The dates dry as well as fresh are dried by spreading in the fields under open sky. In case of rain these can't be collected instantly and the quality of this produce is badly affected which ultimately affects the marketability of the produce.

Government Policies

Government policies with respect to export facilitations or trade restrictions also affect the flow of this produce.

4.12 Gender Issues

Traditionally men own and manage the date farms and women largely contribute in the post-harvest handling activities like packing, sorting, grading etc. In Khairpur and Sukkur, women are encouraged to work in the processing facilities. Women contribute up to 70 percent of the processing workforce. Since traditional dates harvesting and drying is a laborious job that is why men are preferred for this activity. Female participation in production and processing of dates is much higher than many other agricultural crops. At the production stage, once the fruit is harvested and brought to the pack house, female workers are considered best for grading purposes. All growers prefer to hire female workers for this task. At the processing stage, too female workers are preferred over male workers for grading, pitting and packing related activities. Contrary to the cultural practice of the region i.e. upper Sindh, dates processing factories are always full of female workforce. In addition to this, there is a cultural practice of sending the fruit to the homes of workers for pitting, grading and packing. At homes too, female folks perform the activity. Date sector has a huge potential to provide employment opportunities to women workers.

5. Economic Gains Across The Value Chain

5.1 Price Structure and Cost Drivers:

When dates moves from the production point to the end user, it passes through different intermediaries which charge a price from the next buyer depicting a price structure. The cost drivers consist of all the costs incurred by different actors at each stage of the value chain, including production, transportation, purchase price, labor and other material costs

In order to evaluate the profitability for each actor, the data was collected from various farm owners (different farm sizes & experiences) located in Sukkur and Khairpur and interviewed each actor involved in date value chain. For the effectiveness of the interviews, questionnaires comprising of key questions were prepared before the start of the study. Both the team members used the same template to collect data about the financial performance of implementation and management of the farms and the corresponding economic outputs of these farms.

Price differences between two market levels is called 'marketing margins' and are commonly used to examine the differences between producer and consumer prices for the same quantity of a commodity. Marketing margins represent the price charged by market intermediaries for the services provided, including buying, packing, transportation, storage, and processing. Under competitive market conditions, market margins are the result of the demand for marketing services and equal to the minimum cost of services provided plus normal profit.

There are many complications in formulating standard prices, which can be summarized as: (a) day-to-day variation in prices due to supply and demand effects, (b) varietal differences, (c) grade differences, (d) price variation over the season, (e) basis for average out the various grades and varieties, (f) price differences in the consumption and production areas and (g) variation in freight charges. For the purpose of analysis, all the actors in the value chain were visited in the producing areas and in different markets of Punjab and Sindh. Information regarding purchase and sale prices, costs, and services/activities were obtained at each actor level of the value chain. Price and quantity of a pack keeps on changing from day to day and from market to market which are influenced by many factors - supply and demand being the most important one. More emphasis was given on obtaining the information regarding price structure and cost drivers to reach a logical conclusion to estimate the costs and margins of the intermediaries in percentage terms which could be applied, irrespective of the commodity's price, at any point of time to evaluate the situation. The price of dates was collected on the basis of a crate/carton/bag, as most of the marketing cost operations are per crate/carton/bag based, and on the basis of that per Kg price and costs were calculated to estimate the margins, as retail selling is normally done on per Kg basis. For the purpose of estimating the sale price of the product, the recovery ratio of different grades of harvested products, as presented in the tables above was made the basis to get representative information. The information so collected was cross checked as the selling price of one intermediary is the buying price of the other and also within the market different intermediaries knows the nature of operations, their costs and normal range of margins.

Table 1: Price Structure and Cost Drivers at Different r Level

		Date Farm		
		US\$/Kg	PKR/Kg	%
Retailer	Average Selling Price	1.08	105.80	
	Average Buying Price	0.72	71.00	67%
	Gross Profit	0.35	34.80	33%
	Other Costs	0.08	7.60	7%
	Net Profit	0.28	27.20	26%
Wholesaler/Trader	Average Selling Price	0.72	71.00	
	Average Buying Price	0.52	51.00	72%
	Gross Profit	0.20	20.00	28%
	Other Costs	0.07	7.19	10%
	Net Profit	0.13	12.81	18%
Commission Agent	Commission Earned	0.06	6.12	
	Gross Profit	0.06	6.12	100%
	Other Costs	0.03	3.06	50%
	Net Profit	0.03	3.06	50%
Transporter	Truck Rent	0.01	0.80	
	Gross Profit	0.01	0.80	100%
	Other Costs	0.00	0.43	54%
	Net Profit	0.01	0.37	46%
Date Grower	Average Selling Price	0.52	51.00	
	Average Cost			
	Production Cost	0.18	17.40	52%
	Harvesting Cost	0.06	6.24	19%
	Processing & Packing Cost	0.10	9.60	29%
		0.34	33.24	100%
	Gross Profit	0.18	17.76	35%
	Other Costs			
	Transportation	0.01	0.80	10%
	Commission & other charges	0.07	7.14	90%
		0.08	7.94	100%
	Net Profit	0.10	9.82	19%

The above table elaborates the profit margins and costs involved at each actor level involved in the dates value chain. In addition to the breakdown, the costs incurred by each intermediary have also been presented. Total cost of each intermediary was deducted from his gross margin to reach the net profit margin. The production, harvesting and processing & packing costs of a dates producer were estimated at USD 0.18, 0.06 and 0.10 (PKR 17.40, 6.24 and 9.60) per Kg respectively making a total of USD 0.34 (PKR 33.24) per Kg. On deduction of these costs from the average selling price of USD 0.52 (PKR 51.00), producer received USD 0.18 (PKR 17.76) per Kg as gross profit and when transportation cost and commission and other charges were deducted from gross profit, producer received USD 0.10 (PKR 9.82) per Kg as net profit. Similarly, transporter received USD 0.01 (PKR 0.80) and USD 0.01 (PKR 0.37) as gross margin and net profit respectively. The commission agent received USD 0.06 (PKR 6.12) and USD 0.03 (PKR 3.06) as gross and net profit respectively. The wholesaler and retailer received USD 0.20 (PKR 20.00) and USD 0.35 (PKR 34.80) per Kg as gross profit and USD 0.13 (PKR 12.81) and USD 0.28 (PKR 27.20) per Kg as net profit respectively. In case the producer sells the Orchard and Post Harvest Contractor (PHC) enters the chain, the return previously received by the producer, by selling the produce directly in the wholesale market, is shared by the two.

5.2 Distribution Margins:

The following trend present, for five important value chain actors, the way how cost drivers contribute to the elaboration of the final price and the cost that contribute more to the increasing of the final price.

The below trend also explains the typical domestic supply chain scenario that how the distribution margin (DM) increases at each actor level and how the ultimate price reached at optimum value passing through different channels of date value chain. In this regard, two scenarios have been built i.e. structure of supply chain in case of self-marketing and in case of farm sold to pre-harvest contractor. In case of self-marketing the absolute cash margin of producer was calculated on the basis of sale price of one Kg of the product in the wholesale market while in case of selling the orchard to the PHC the absolute cash margin of producer was calculated as the sale price of the orchard per Kg harvested by the contractor. The distribution margin of the contractor is the sale price in the market -less his purchase price and commission paid per Kg on its sale value. The distribution margin of commission agents is the commission on sale revenue. Similarly the distribution margins of wholesalers and retailers were calculated on the basis of their purchase and sale prices.

Figure 15: Distribution Margin of Typical Domestic Dates Value Chain - Self Marketing

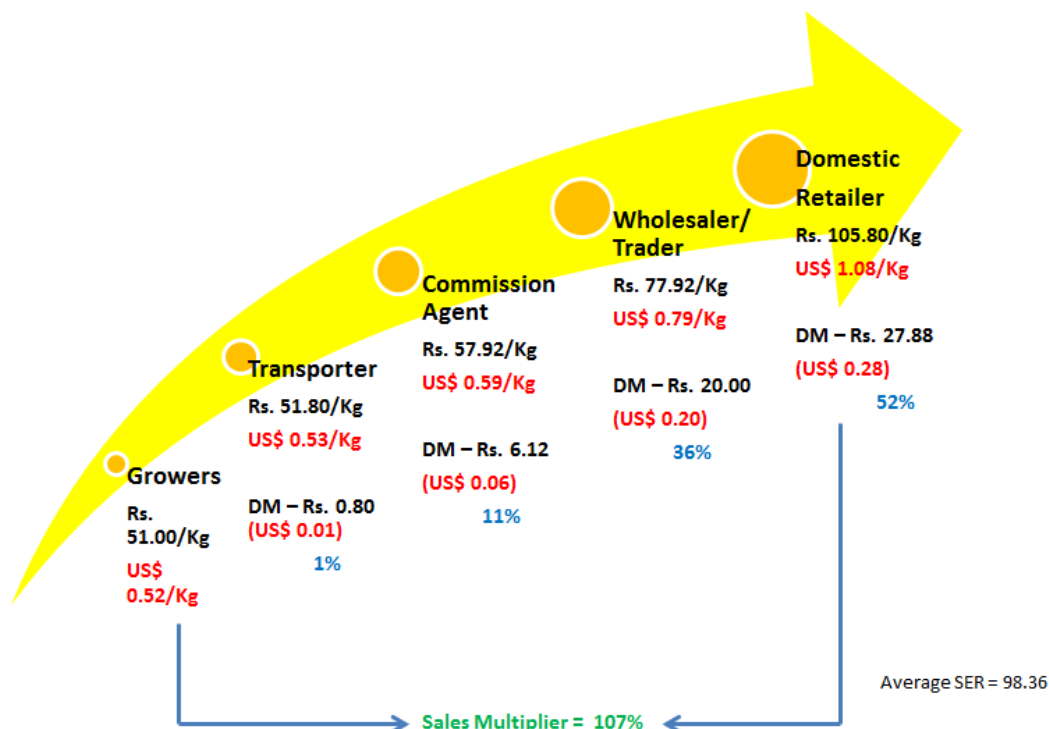
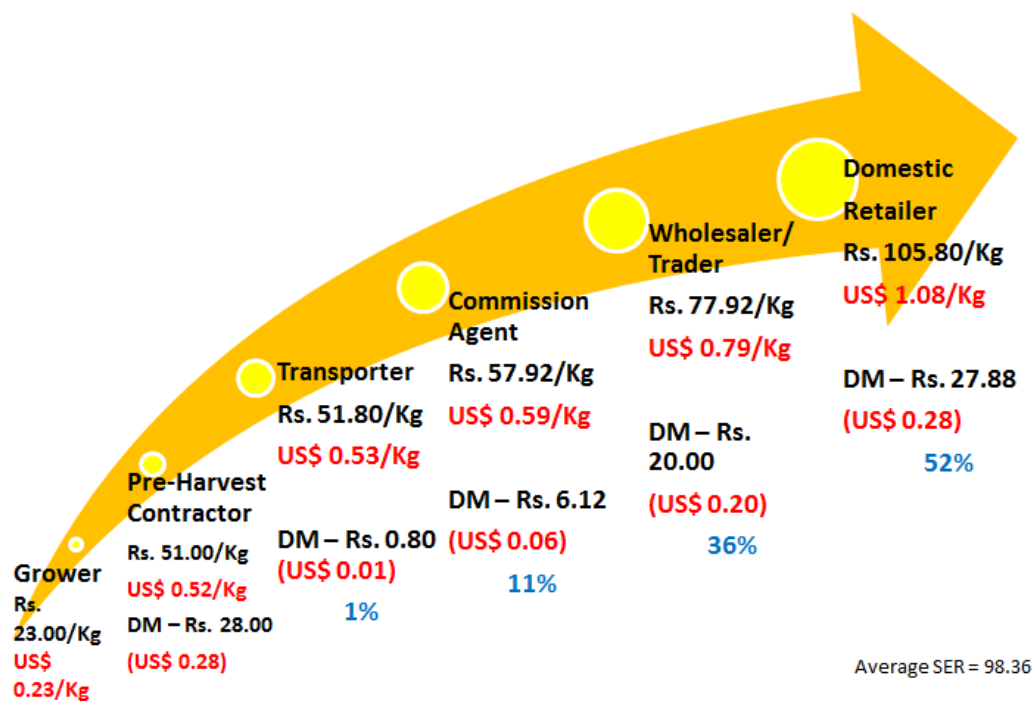


Figure 16: Dates Value Chain – Farm sold to Pre-Harvest Contractor

There is a general perception that intermediaries, involved in the marketing of agricultural produce, take away a major share of the total profit. To reveal the real picture, distribution margins for each market intermediary have been estimated. The distribution margin or price spread is the difference between the price paid and received by each specific market intermediary.

As shown in the above scenarios, the retailer received maximum share of 52 percent in the distribution margin while the wholesaler, commission agent and transporter received 36 percent, 11 percent and one percent share in distribution margin respectively. The retailer's share in the distribution margin is calculated on the basis of assumption that the total produce purchased by him is sold at a given price. In reality it does not happen so. Retailer is the last owner of the produce and has to bear all sorts of losses as the part of produce left unsold fetches a much lower price next day.

5.3 Marketing Strategies:

During field visits and while interviewing the different actors involved in date value chain, it was revealed that there are two types of practices commonly used by the farm owners i.e. farm managed, operated and marketed by owner himself and farm sold to pre-harvest contractor at maturity stage.

Different analysis shows that there is a gap in the sales value if farm was not managed and marketed by the owner. By self-marketing there is still a big room to sell the produce at a much premium price by using latest marketing techniques and modern packaging. On the other hand pre-harvest contractor only uses the traditional way of selling the produce through commission agents.

5.4 Employment Generation and Economic Gain across the Value Chain:

As the produce moves from its production point to the consumers, an economic activity is generated at each stage of value chain. There are some direct returns associated with the trade of the produce which result in the shape of margins, which have been discussed in earlier part of the report. In addition to this, employment is also generated at each step to carry on different activities which result in the shape of economic gain to all participating people. An activity wise analysis of employment generation and economic gain associated with each activity, for domestic market value chain, has been presented in the table below:

Table 2: FTE Employment calculation for Domestic Market

Labor Multiplier Calculation - Dates Value Chain			
FTE Employment Calculation			
Description of activities	Man Days	PKR	Estimation of time to complete the work
Harvesting, picking of fresh dates, processing to prepare dry dates, drying, Sorting/grading, cleaning, packing, loading	60.00	31,200	60 MD are required to complete the process @ Rs. 520/MD
Preparation of crates/bags	5.00	2,600	5 persons work for 8 hours to complete the work
Transportation to dates market	1.00	520	2 persons work for 4 hours to complete the job
Unloading and auction by Commission Agent	1.50	780	4 persons work for 3 hours to complete the job
Weighing and loading on the truck	4.00	2,080	8 persons work for 4 hours to complete the job
Transportation to destination city	5.50	2,860	3 persons work for 40 hours to transport 300 crates/bags truckload
Unloading	3.00	1,560	6 persons work for 4 hours to complete the job
Brand preparation/repacking	6.00	3,120	6 persons work for 8 hours to complete the job
Transporting to cold store/shop	3.00	1,560	4 persons work for 6 hours to complete the job
Transportation from cold store to sale point	3.00	1,560	4 persons work for 6 hours to complete the job
Selling by trader/wholesaler	1.00	520	2 persons work for 2 hours to complete the job
Purchase by retailer	5.00	2,600	5 MD are required to complete the work
Transportation by retailer	3.00	1,560	3 MD are required to complete the work
Retail selling	5.00	2,600	5 MD are required to complete the work
Total Man Days	106.00	55,120.00	

For the purpose of analysis a quantity of five metric tons of produce, obtained from one acre of land, was made basis of estimation of employment generation along the value chain. All other activities have been estimated accordingly. For example 60 man days, of harvesting labor, are required for harvesting, picking of fresh dates, processing of dry dates, drying, sorting/grading, packing and loading 5 MT of produce obtained from one acre of land. Similarly, labor involved in all other activities, as shown in the table, like preparation of crates, transportation to date market, unloading, auctioning, weighing, loading on the truck, transporting to the destination city repacking, carrying to and from cold store/shop, wholesaling, buying by the retailers, carrying to the retailers place and retailing, has also been estimated in man days.

The above table shows that when five tons of the produce moves along the value chain, from harvesting to the consumption point, an employment, equal to 106 man days, is generated. When these man days were converted into jobs, as per assumptions made, it became equal to 0.41 jobs, means 0.41 FTE Employment is created as five tons of produce moves along the

value chain and it generates an economic gain for all the participants equal to USD 560.39 (PKR 55,120).

5.5 Assumptions for Labor and Sales Multiplier:

The value chain can be divided into two distinct activities – Production and Marketing. Labor involved in production, and returns associated with that, can be directly calculated. Here, for the purpose of estimation of FTE employment generation, during marketing of the produce, the labor activities were recorded from harvesting point till the produce is retailed to the consumers.

There are different ways the date fruit is harvested by the producers. The harvesting practices depend on the producer's decision that how much of the produce is to be harvested as fresh and how much to be processed to prepare dry dates. The main feature of harvesting dates is to complete the whole process, of harvested produce, on the same day. It includes harvesting, picking of fresh dates and processing of dry dates. On the basis of interviews and discussion with the date producers and other actors of the value chain, certain assumptions were made which have been given below:

Critical assumptions

For conducting analysis and estimation of labor and sales multipliers certain assumptions were made. These assumptions have been made on the basis of information collected from date farmers and other actors of value chain through interviews and from other primary and secondary sources. An effort has been made that the assumptions should be realistic and should represent the on ground situation. These assumptions include:-

Basic assumptions made for the calculation of labor multiplier

1. Basis of calculation = Harvesting and marketing of 5 MT of produce from one acre
2. No. of plants per acre = 100
3. Average wt./crate = 40 Kg
4. Average Jute bag weight = 100 Kg
5. Production per plant = 50 Kgs
6. Production share - Fresh dates = 24 percent
 Dry dates = 76 percent
7. No. of man days required to harvest and prepare 5 MT of produce = 60
8. One truck load = 300 crates/bags (12 MT)
9. One crate of fresh dates = One small bag of dry dates
10. Average wage rate = PKR 520/MD
11. One Man-day (MD) = 8 Hours
12. One FTE = 2,080 Hours per annum
13. Produce placed in the cold store = 80 percent
14. Applicability of the model = this model would only work if there is a change (increase in the production) as production is the basis of calculation.
15. Extent of indirect job estimation = Jobs created at the first level of indirect sales have been estimated e.g. only transportation cost is calculated and jobs created in sales of fuel, spare parts etc of the transportation business have not been estimated.

Assumptions used to calculate the Sales Multiplier are:

1. Farm size considered for calculation purpose = 1 Acre
2. No. of plants per acre = 100
3. Production per plant = 50 Kgs
4. Estimated production per acre = 5,000 Kgs
5. Production share – Fresh dates = 24 percent
Dry dates = 76 percent
6. Average crate weight = 40 Kgs
7. Average Jute bag weight = 100 Kgs
8. No. of crates per acre of 40 Kg each = 125 crates
9. One truck load = 300 crates/bags (12 MT)
10. One crate of fresh dates = One small bag of dry dates
11. No. of produce types = Two(Fresh dates and Dry Dates)
12. Farmer's average selling price of produce = PKR 51/KG
13. Final average selling price of retailer = PKR 105.80/KG
14. Applicability of Multiplier = percent margins would remain the same, if:
 - (a). Produce sale is marketed through the established value chain,
 - (b). There would not be major structural changes in the value chain system.

The above-mentioned assumptions were taken into account to calculate the labor and sales multipliers for the dates sector. A conservative approach has been used for the calculations and no inflation adjustment has been accounted for and this suffices the minimum growth expected because of the above-mentioned variables. These multipliers can be used further for any increase in the labor, production and sales. These multiplier factors will not be changed until and unless there will be a major change in the value chain cycle.

5.6 Labor and Sales Multipliers:**Labor Multiplier Calculation:**

Total Man days estimated	106.00
(as shown in above section)	
No. of FTE hours per annum	2,080.00
One man day hours	8.00
Labor Multiplier formula=	$\frac{\text{total man days estimated} \times \text{one man day hours}}{\text{total FTE hours per annum}}$
	$\frac{106.00 \times 8.00}{2,080.00}$

Labor Multiplier = 0.41

It means 0.41 FTE Employment is created as five tons of produce moves along the value chain and it generates an economic gain for all the participants equal to PKR 55,120.00 (USD 560.39).

Table 3: Sales Multiplier Calculation:

Grower	51.00	51.00	
Transporter	51.80	0.80	1 percent
Commission Agent	57.92	6.12	11 percent
Wholesaler/Trader	77.92	20.00	36 percent
Retailer	105.80	27.88	52 percent
	105.80	100 percent	107 percent

Initial selling Price – PKR = 51.00

End selling Price – PKR = 105.80

Margin to be distributed - PKR = 54.80

$$\begin{aligned}
 \text{Sales Multiplier formula} &= \frac{\text{End selling Price} - \text{Initial selling Price}}{\text{Initial selling Price}} \times 100 \\
 &= \frac{105.80 - 51.00}{51.00} \times 100
 \end{aligned}$$

Sales Multiplier 107 percent

On the basis of assumptions and formula given above, each activity was studied to calculate the Labor and Sales Multipliers to see the economic gains along the value chain, as the produce moves from production point to the consumer. Analysis of financial and employment data was conducted to determine the impact of project interventions on increase in sales and employment. Since the multiplier is calculated on percentage basis, it can be applied to the past, present and future data to calculate labor and sales.

5.7 Sales and FTE Analysis:

Labor and sales multipliers have been estimated under some assumptions, described in the above section. These multipliers can be applied in the light of critical assumptions. Information regarding FTE direct employment and direct sales, in respect of partner date farmers for the

year 2012 & 13, was not available, so for the purpose of elaborating the application of labor and sales multipliers, the required information for the year 2011¹³ has been used.

Direct and Indirect FTE Employment

The USAID Firms Project has estimated that during 2011, a total of 2,585 direct FTE jobs have been created at partner date farms, at production level. It has also been reported that a total quantity of 3,173.7 MT was sold by the partner date farmers in domestic market. By applying labor multiplier, the marketing of 3,173.7 MT of produce, by the date farmers, resulted in creation of 260 FTE indirect employments across the value chain making the total jobs created, direct and indirect, equal to 2,845. By assuming that the direct FTE jobs (2,585) received the same level of economic gain, as was estimated above, for indirect jobs, the economic gain to direct FTE jobs came out to be PKR 484 million (USD 4.92 million). The cumulative economic gain to total, direct and indirect FTE employment, from production to retail point, has been estimated to be PKR 515.59 million (USD 5.24 million).

Direct and Indirect Sales

Direct or on-farm sales include total sale value of produce received by the producer at farm gate or at first selling point. As the produce moves along the value chain there is an increment in its sale value till it reaches the consumer in domestic market. The sale value of produce over and above the sale value of producer is called indirect or off-farm sale.

Indirect sales can be calculated by multiplying the direct sales with sales multiplier. In 2011 direct sales of date farmers were PKR 137.40 million (USD 1.40 million) while the indirect sales were of PKR 147.02 million (USD 1.49 million). The total direct and indirect sales come out to be of PKR 284.42 million (USD 2.89 million).

¹³ Dates Baseline Report, 2012, USAID Firms Project.

6. Conclusion and Recommendations

6.1 Conclusion:

Pakistan is among the top ten date producing countries of the world and is ranked at sixth position having a share of about 7.6 percent in total world production, with annual production of 557 thousand metric tons (2011)¹⁴. Area under date plants has increased by 23 percent during last two decades while the production has remained almost stagnant.

In Pakistan dates are mainly produced in Sind and Balochistan having 90 percent share in total production (Sind – 54 percent & Balochistan - 36 percent). While Punjab and KP have eight percent and two percent share respectively¹⁵.

Sukkur and Khairpur are the main dates producing districts of Sind. From 1993 to 2012, area under date plants in Sind increased by 84 percent while production increased by 257 percent¹⁶. This higher increase in production, against the increase in area, can be attributed to the improvement in yields which highlights the potential of the area.

In spite of the fact that dates production has become popular among the producing community of Khairpur and Sukkur, indicated by the increase in area and production there, this sector faces several constraints which include traditional agricultural practices, lack of technical know-how, unreliable input supplies, scarcity of proper equipment, lack of formal training on good agricultural practices, orchard management and post-harvest handling of produce, resulting in high waste ratio.

The total produce is harvested in a traditional manner and major part of the product is converted to low value dry dates. Very small portion of the dates produce is converted to fresh dates, due to arrival of rainy season at the time of harvesting. Farmers harvest the produce early to avoid possible loss, due to unfavorable weather conditions, and sufficient time is not given to get more fresh dates. Total produce, fresh and dry is marketed to the local date market where it is sold to the traders who come from the whole country. Produce is marketed by making its different grades of everybody's own choice or as per direction of the commission agent. Due to the non availability of formal credit facilities, obtaining of finance from commission agents, to meet immediate cash needs and to undertake production practices, is a common practice with the binding to sell the produce through the commission agent, providing finance. It limits the choice of the producer to market the produce independently. In addition to this markup is also charged by the commission agent on the amount provided as advance which reduces the margin of the producer.

Major trade of the produce takes place during harvesting season when traders purchase their annual requirement. This is a common practice of traders, wholesalers and retailers to purchase the produce in bulk and place it in the cold stores. Date fruit has very good storage life and it can be safely stored for more than a year under normal storage conditions. The produce is placed in cold stores and sold throughout the year as per market conditions. During the study it was revealed that 80 percent of produce is placed in the cold stores.

¹⁴ FAOSTAT

¹⁵ Agricultural Statistics of Pakistan, 2010-11

¹⁶ Source: Agricultural Statistics of Pakistan 2011-12.

Dry dates are prepared on the farm and sold/exported through the established market chain. In case of fresh dates domestic trade takes place the same way but for export market dates are processed in the processing units established in the area. There are around eight to ten dates processing factories in the area. The processors also act as exporters. Other exporters, not having the processing facility, procure the produce from the processors. Females constitute 70 percent of labor force at processing level.

Pakistan started export of dates during 1982-83 for the first time when because of the Middle East situation it became difficult for some countries to obtain dates from Iran and Iraq. Earlier, Pakistan had been exporting only dried dates in limited quantities¹⁷. Pakistani dates fetch low price in the international market, mainly due to quality issues. Major export markets include India, Afghanistan, Australia, Canada, Denmark, Germany, China, Japan, USA, UAE and UK. Pakistan's largest export markets for fresh and dry dates are USA and India respectively. Export of dry dates, in terms of value, dominates the trade with 92.61 percent share against 7.39 percent of fresh dates (2008-09)¹⁸. Fresh dates fetch better price as compared to dry dates in international market as well as in local markets. There is no direct export to high value niche and retail super markets because of not meeting the required quality standards and certifications. This is fortunate that, although at low prices, the inferior quality dates also have good acceptance in the international market for industrial uses.

Major areas of work in date sector include improvement in the quality of produce by adopting good agricultural practices and better harvest and post harvest care. In addition to this varietal improvement in dates production is also a need of the time as Pakistan has favorable climatic conditions and soil. By producing better date varieties, having good acceptance in high end markets, Pakistan's position in international market, with respect to date trade, will be elevated.

6.2 Recommendations:

The importance of dates in human nutrition is well-known. Dates play an important role in balancing the diet by providing energy-rich nutrients. The Sindh region has rich topographic and climatic endowments and variations in soil on which a large range of fruits, such as dates are grown. Sindh date industry needs to move from a production-driven industry to a market-focused one, and the production of dates meeting specific market requirements should be facilitated.

Productivity:

- ✓ Trainings of growers, on the aspects of dates quality improvement/storage issues, dates drying techniques, methods of increasing fruit size, production enhancement, sorting/grading and post harvest handling, may be conducted on regular basis in order to enhance their capacity to manage their farms professionally and as per requirements of GAP.
- ✓ In order to have effective results Technical Field Officers (TFOs) may be appointed who will visit the dates farms on regular basis with the objective of providing information/guidance regarding latest farm management techniques in order to have better yield and quality.
- ✓ A major part of the produce is lost due to unhygienic/traditional drying methods in the open air which leads to low farm productivity and poor market prices. The orbit of provision of solar dryers, for the purpose, may be enhanced, so that maximum quantity of

¹⁷ Source: Article in Daily Jang

¹⁸ Source: Fruit, Vegetables and Condiments Statistics of Pakistan – 2011-12 and SOW of the study

produce may be dried on scientific lines, which fetches better price in local as well as in export markets.

- ✓ The date processors may be provided trainings on British Retail Consortium (BRC) certification, computer based systems, health, hygiene and safety and quality control and supervision.
- ✓ In addition training on food safety and quality standard, workforce development and management, export marketing, cold stores, hydraulic lifts and x-ray machines use, may also be provided to enhance their capacity to perform activities on modern lines and in a professional manner. These interventions would enhance the processors productivity and would enable them to adopt food safety, processing, and quality assurance practices to compete in international and domestic markets.
- ✓ Pakistan has few commercial varieties having acceptance in the international market, which too are exported at very low price. Work on evolving new varieties of high economic value may be initiated so that Pakistani produce may be marketed to the high end market at a good price.
- ✓ Unfavorable weather conditions, at the time of harvest, damages the crop and also limit the farmer's efforts to get maximum quantity of fresh dates. Use of Tyvek Bags, to cover the fruit at appropriate time, may prove helpful in minimizing the fruit loss. The use of Tyvek Bag, with complete information regarding precautions and appropriate way of using it, may be promoted to reduce the produce damage/loss at maturity stage.
- ✓ Use of tissue culture technique, for the preparation of new plants, may be promoted for successful plantation of new orchards.

Effective Marketing:

- ✓ Presentation and branding of product has gained special importance in the modern marketing techniques. Dates growers, processors and exporters may be provided the necessary information and training on the brand development activities so that they may market their produce to the high end markets in a successful manner.
- ✓ International markets may be captured with highly focused and professional approach. There must be a considerable pool of international buyers. These diverse portfolios will not only help exporters to learn different market behaviors yet keep the export process continuously growing as well.
- ✓ Corporate marketing is an area which has huge potential to accommodate date sector. Some sustainable linkages may be developed with corporate sector such as modern retail and large scale food processing companies. In addition to this a structured model can be devised in collaboration with some courier company.
- ✓ International exposure trips may be arranged for dates growers so that they can learn new techniques and technologies and stay abreast with latest agricultural trends in dates sector. Such activities can also create opportunities to explore export options in modern markets.
- ✓ Date markets in the producing area are very small and lack basic facilities. First trade of the produce takes place in these markets and traders from almost all over the country visit these markets during harvesting season. The infrastructure of these markets does not meet the minimum standards/requirements to perform different activities like storing,

auctioning, weighing, sorting, grading and packing. Establishment of a proper date market with all the required facilities is need of the time to promote trade of the produce.

Economic Benefit Analysis:

- ✓ Partner farms and other related stakeholders may be provided assistance in preparation of financially viable business plans. In order to have effective results Business Plan seminars should be arranged for the beneficiaries.
- ✓ Some mechanism/policy measures may be adopted to provide micro finance facility to the growers, to undertake production and marketing activities, so that their dependence and exploitation by the commission agents may be reduced.

Awareness Campaigns:

- ✓ A media base education campaign may be designed to educate dates producers. This campaign should cover main date growing areas. Producers can be provided important and useful information regarding pre-harvest activities, crops care, post-harvest techniques and appropriate handling throughout the crop cycle. Local radio and regional television channels are the most effective mediums for such communication.
- ✓ A data base of dates farmers may be developed and they may be directly educated with the help of regular SMS based communication. This approach is effective, instant as well as low in cost. Weather alerts may also be sent through this system so that the producers may perform their activities accordingly.

7. Annexure

Annex -1 Scope of Work of the Study:

*Sales and Labor Multiplier Study for Peach & Dates Sector
Work Plan Level 11360 Action 7091, SOW 2187,*

Sales and Labor Multiplier for Peach and Dates Value Chain

Peach and Dates Sectors Development Programs USAID Firms Project

Study at a glance:

The USAID Firms Project is seeking a team of consultants to develop a model to estimate the economic impact of USAID Firms Project's interventions throughout the entire value chain of both the peach and dates sector in Pakistan. The study will collect and analyze data from different stakeholders in the peach and dates value chain and calculate a multiplier for the change in sales and jobs with necessary assumptions and qualifiers that provide USAID a level of confidence for attribution to its investments. This analysis will also help the USAID Firms Project understand the change in sales by volume and the change in the number of jobs created throughout the peach and dates value chains in Pakistan. This assessment is expected to commence in July 2013 and will be completed by October 31, 2013.

1. Studies Titles:

Sales and Labor Multiplier for Peach and Date Value Chain

2. Background:

2.1 Peaches: Swat produces 67 percent of Pakistan's peaches, with an average annual production of 44,000 metric tons of a large number of varieties. Peaches are traditionally sold in local *mandis* (markets) and through intermediaries in Peshawar and Islamabad. The strong, established local marketing channels in Swat result in the sale of almost all the produce, minus wastage. Grades C and D peaches can also be supplied to peach pulping facilities. Prior to the 2007-2008 insurgency, peaches were exported from Swat at good prices, however, currently, little is exported, and orchards are not directly linked to export markets.

This sector faces several constraints including a lack of formal training, scarcity of proper equipment, limited access to markets, and an absence of a formal link between peach growers and pulping units. Other factors that reduce small and medium enterprises' (SME) potential revenues include a high waste ratio of 25 percent, a lack of utilization of C and D grade fruits and the absence of export certification or established export channels.

2.2 Dates: Pakistan grows approximately 600,000 metric tons of dates annually. Dates are Pakistan's third largest horticulture crop and Pakistan is the fifth largest producer of dates in the world. There are approximately 8,000 SME farmers, eight date processing facilities, and 110 traders in Khairpur and Sukkur districts where the project works. Women make up to 70 percent of the processing workforce. Pakistan exported USD64 million in 2011 worth of dates, which is 5.45 percent of the total international date trade of USD 1.17 billion.

In 2011, Pakistan was the third largest date producer in international market and its share (6.85 percent approx.) grows every year. In terms of quantity, it produced 113,358 metric tons of fresh dates in 2011. However, the date sector is still struggling for increased share in terms of value compared to its main

competitors, Tunisia, the U.S., and Egypt. Currently, due to unimproved facilities and practices, Pakistan is exporting low quality dates and dry dates that prevent it from fulfilling the demand of high end markets. Supply-side constraints primarily exist at date farms and within processing facilities. The lack of processing machinery and tools, on-farm storage, cold storage, and access to finance are the major impediments faced by date palm SME farmers and processors, which results in poor quality, high waste, and date contamination.

3. USAID Firms Project and Peach and Dates Sector Development Initiatives:

3.1 USAID Firms Project: The focus of the USAID Firms Project is to assist the government of Pakistan to improve its service delivery and develop dynamic, internationally competitive private-sector firms to accelerate sales, investment, and job growth. The value chain development component of the project aims to work directly with businesses in select value chains and create a robust private sector.

3.2 Peach Sector Development Initiative: In 2012, the USAID Firms Project started working with 440 peach growers in 11 geographical clusters in Swat to help them upgrade their skills, increase revenues, and create jobs. The USAID Firms Project's M&E team collected data from peach growers to capture the outcome of project activities in the sector. The data collected by the project's M&E team demonstrated an annual increase of USD \$2 million in producer SMEs' revenue as a result of the project's activities. Building on those results the USAID Firms Project started working with 440 additional peach growers to upgrade their skills, reduce wastage, and increase production and revenue in 2013. The project will also offer exporting and linkage assistance to a small number of producer SMEs who grow exportable varieties of peaches to help them penetrate export markets.

As part of the 2012 project activity in the sector, the project completed a feasibility study that demonstrated a high demand for pasteurized peach pulp production in Swat by middle-tier companies that produce consumer pulp products. Because of the study's positive findings, the project included a plan to assist one pulping unit in Swat during 2013-14. This activity integrates the value chain vertically by linking peach growers to pulping facilities that will allow them to utilize C and D grade fruit and meet peach pulp demand.

3.3 Dates Sector Development Initiative: The date assistance program is designed to increase the quality and quantity of fresh dates compared to the existing product mix that is dominated by the dry dates. This shift in focus will drive an incremental shift in profitability by reduction in cost, improved productivity, and enhanced quality of fresh dates. The project has equipped a group of 45 SME farmers and three SME processors with the tools and processing machinery that is required for quality date processing. The three processors are being equipped with the latest processing, cold storage facilities to enable them to maintain high quality processing, storage standards, and increase exports.

The value chain studies are outlined in the sections below. It is guided by the goals, strategic objective and intermediate results per the USAID Economic Growth & Agriculture Office Results Framework listed below.

Goal:	Improved economic status of target populations
Program Purpose:	Dynamic internationally and domestically competitive firms with accelerated sales, investment, and employment
Intermediate Result 1:	Improved economic performance of target enterprises

Per the project's PMP, the following indicators are used to measure the project's peach and date activities. Although the project uses all of the following indicators to measure its peach and date interventions, this study will specifically target the first three indicators.

- I. Increase in sales revenue of project- assisted SMEs**
- II. Increase in employment for project-assisted SMEs**
- III. Increase in value of exports of targeted commodities for project-assisted SMEs**
- IV. Value of private sector investment mobilized through formally engaged SMEs (on average \$ for \$ cost share by partner SMEs)
- V. Number of project assisted training events conducted
- VI. Number of participants trained through project assisted workforce development training events
- VII. Number of SMEs trained through project assisted workforce development training events
- VIII. Number of micro, small and medium enterprises (MSMEs), including farmers, receiving business development services from USG assisted sources
- IX. Number of hectares under improved technologies or management practices as a result of USG assistance
- X. Number of SMEs using project funded implements
- XI. Number of marketing events conducted with project assistance to address export opportunities in targeted sectors

4. Project Achievements (as of May 31, 2013):

The USAIDFirms Project started in May 2009 and will conclude in December 2014. The project's M&E team measures the economic benefits that have been created as well as benefits that are expected to be realized throughout the peach value chain.

4.1 Peach

The Swat District produces 44 percent of Pakistan's peaches and 76 percent of KP peach production. The sector employs a large number of full and part-time SMEs who grow a range of peach varieties. Peaches are traditionally sold in local markets and through middlemen in Peshawar and Islamabad. The established local market channels are strong and SMEs generally sell their annual production. However, there is very little export of peaches from Swat and the orchards are not linked to export markets.

Sector constraints include: lack of formal training, scarcity of proper equipment, limited access to markets, and an absence of a formal link between peach growers and pulping units. Other factors that reduce producers' potential revenues are high waste, a lack of utilization of lower grade fruit categories, and the absence of export certification and established export channels. To address these constraints, the project completed the activities below:

a. Workforce Development, Trainings, and Events:

In 2012, the USAID Firms Project conducted 22 trainings on pre and post-harvest best management practices for 449 peach growing SMEs in 11 clusters to build their capacity and increase revenue and jobs. This resulted in USD 2.1 million in additional sales and 121 new full time equivalent (FTE) employments.

In 2013, the project will train 440 additional peach farming SMEs on proper harvesting techniques, sorting, storing, and transportation to help them decrease their post-harvest losses. Proper post-harvest handling increases production and ensures that better quality peaches reach the local markets. Trainings will also be conducted on important pre-harvest activities such as pruning, irrigation, and fertilizer application.

b. In-kind Assistance

In 2012, the project provided pruning and harvesting kits and more than 16,000 corrugated cartons to 449 peach SME farms so that they could apply their knowledge of pre and post harvesting best practices. In 2013 and 2014, the project will continue to provide pruning toolkits to additional 440 SME farmers in order to support the best practices trainings. These kits will help SMEs practice proper tree and canopy management and ensure minimal damage to trees. The harvesting kit plays an integral role in implementing proper harvesting techniques. It includes a harvesting ladder, small pruning shears, harvesting bags, plastic collection bins, and a waterproof tarpaulin.

c. Export Potential Analysis, Training and Market Linkages

Swat peaches enjoy a very strong domestic market. Almost all varieties of Swat peaches are sold in the local, regional, and national markets. In 2011-2012, the USAID Firms Project M&E team collected data which demonstrated that 449 SMEs recorded total sales of USD 5.53 million, which is an increase of USD 2.1 million from 2011.

After SME farmers realized the increase in sales, some of them requested additional support for exporting. In 2013, the project will complete an export potential analysis for beneficiary SMEs that sell late-season peach varieties. These varieties have a longer shelf life making them well suited for export. If the analysis identifies export potential, the project will carry out two activities in 2014 to support peach exports. First, a delegation of representatives from major exporters and SMEs will attend an international trade show to increase their market awareness and create market linkages. Second, the project will conduct a “Producing for Exports” training to help upgrade the quality of fruit so it meets export standards.

d. Peach Pulping Unit

The peach sector suffers from 40 percent post-harvest loss annually. One of the main constraints is a lack of pulping units that can purchase and process grade C and D peaches. The reduction in post-harvest losses can be achieved by utilizing fragile and shorter shelf life peach fruit for value addition purposes.

According to a pre-feasibility study conducted at one of the pulping units in Mingora, Swat, 11 buyers reported an annual demand of 1760 tons of peach pulp compared to the current production of 36 tons. As a result of that study, the project identified that this pulping unit in Swat that could be upgraded on a cost share basis to meet peach pulp market demand.

In 2013 and 2014, the project will provide in-kind support to one peach pulping unit by providing pulping equipment and machinery and conducting trainings for the production staff of the pulping units. The pulping unit will upgrade its infrastructure to house the new equipment and meet environmental standards.

4.2 Dates Value Chain Development

The date's business model addresses the constraints of date farmers and processors with the interventions below:

a. Workforce Development, Trainings, and Events

In 2013, the assistance for three date processing units will comprise of training programs on food safety standards so that facilities comply with international standards, and training programs on export marketing management to help brand products for international markets. Select SMEs will also receive training on packaging design for direct sales in local markets.

b. Dates On-Farm and Processing Infrastructure support:

In 2012, 45 SMEs received farming equipment and tools to address the waste, quality, and productivity constraints inherent in date production. These SMEs also received solar drying tunnels that will improve the date quality, decrease drying time, and improve food safety.

In 2014, each of the date processing units will receive cold storage facilities along with backup generators that will increase the date's shelf life. They will also receive x-ray machines for the detection of foreign materials during processing.

c. Market Linkages

In year 2013 and 2014, the date processing units will participate in international trade fairs so that they can create market linkages. In 2014, the project will assist date processors in the design and development of branding and packaging material, as well as develop a business directory of program partners for market exposure.

5. Objective of the Studies:

The overall objective of these two studies) is to conduct a value chain analyses to measure the potential impact of the USAID Firms Project on the peach and dates value chains. For this purpose the value chain analysis will measure the forward linkages (source of inputs and destination of output) and determine the value-added.

The study will collect and analyze data from different stakeholders in the peach and dates value chain and calculate a multiplier for the change in sales and jobs with necessary assumptions and qualifiers that provide USAID a level of confidence for attribution to its investments. This analysis will also help the USAID Firms Project understand the change in sales by volume and the change in the number of jobs created throughout the peach and dates value chains in Pakistan. It will also provide practical recommendations for future improvement of the USAID Firms Project's peach and dates sector development programs.

The assessment will consider six key sub-objectives. For each sub-objective, the project has defined the minimum activities that consultants are expected to complete.

- Sub-Objective 1: Define and document the Value Chains for the Peach and Dates sectors in Pakistan.
- Sub-Objective 2: Systematically document the USAID Firms Project's intervention in these value chains.
- Sub-Objective 3: Acquire information on the distribution of economic gains across the peach and dates value chains by various players.
- Sub-Objective 4: Determine the labor multiplier and sales multiplier equations with assumptions for both the peach and dates sectors. These multipliers must be transferable for use by all stakeholders in the sector.
- Sub-Objective 5: Determine specific enabling environment constraints that impact peach and date value chains specifically with regard to sales and employment.
- Sub-Objective 6: Provide practical and realistic recommendations on how modification in the program interventions can create greater impact in generating sales and creating employment.

6. Scope of the Study

7.1: Peaches: The consultant(s) will focus on the peach production within the province of KP. The consultant(s) will work from offices in Swat, Islamabad, and Lahore for the majority of the study but will require frequent travel to other cities in order to interact with a wide range of project beneficiaries, transporters, processors, and marketing agents to analyze the complete value chain.

7.2: Dates: The consultant(s) will focus on the date production areas within Sindh province. The consultant(s) will work from Karachi, Islamabad, and Lahore Offices for the majority of the study period with frequent travel to other cities including Sukkur and Khairpur, in order to interact with project beneficiaries, transporters, processors, and marketing agents to analyze the complete value chain.

7. Details of Specific Tasks:

General Activities:

- a. In collaboration with the USAID Firms Project M&E and technical assistance team, develop and finalize the detailed methodologies to use for both the peach and dates studies, including the conceptual frameworks, assumptions and coefficients/ratios, protocols, quantification of impacts, attribution, instruments, and detailed analyses plans.
- b. Seek approval from USAID Firms Project M&E Advisor on study design, methodologies, time frame and any instruments to be used during the study.
- c. Where possible and required; coordinate with relevant peach and dates assistance programs, national and local governmental officials, community elders and other stakeholders for the smooth implementation of the study.
- d. Develop analyses plans for both studies and seek USAID Firms Project's approval.

- e. Provide two draft reports to the USAID Firms Project in English for peach and dates for review and comment. The report should be in the prescribed format as detailed in Annex 2
- f. Conduct any supplemental analyses based on feedback from the USAID Firms Project, including results in the final report.
- g. Work closely with the designated USAID Firms Project focal points throughout the contract period.
- h. Adhere to all relevant policies and procedures of the USAID Firms Project as detailed in Section 15.

Specific Activities by Sub-Objective:

Sub-Objective 1: Document the Value Chains for the Peach and Date Sectors in Pakistan

Key Questions:

- a) How are the peach and date value chains structured?
- b) Who are the different actors involved in the peach and date value chains and what are their functions?
- c) How do the different peach and dates varieties reach different destinations such as *mandis*, retailers, and export locations from farm gates?
- d) What are some of the critical factors that influence the flow of peaches and dates from farm gate to other destinations?

Proposed Methodology:

- a) Conduct meetings with relevant members of the project teams and management and other relevant stakeholders of the peach and dates value chains.
- b) Conduct desk review of the USAID Firms Project M&E related documents and other secondary sources.
- c) Define the peach and dates sector value chains.
- d) Based on the information gathered from discussions with project teams, management and other stakeholders along with secondary research conducted (study findings); describe the different actors and their functions in the peach and dates value chains. This may include: input suppliers; nursery developers, producer, transporters, traders, wholesalers, retailers, processors, exporters and other stakeholders such as government, academia and Civil Society Organizations (CSO)
- e) Map out the flows of different varieties of peaches and dates (between all actors and on a geographical basis).
- f) Using the study findings, identify the different critical factors and explain how they influence the peach and dates value chains. These could be government policies; role of different stakeholders, market dynamics, climatic conduction, etc.
- g) Detail the market structure for peach and dates by using the study findings to show a logistical function, an informational function, and a distributional function. The logistical function includes not only the transformation of goods over time (storage), but also embraces place (transportation), and form (processing) activities.

Sub-Objective 2: Systematically document the USAID Firms Project's interventions in different aspects of the Peach and Dates Value Chains

Key Questions:

- a) What were the different components of the USAID Firms Project peach and date value chain development programs?
- b) What were the achievements of each of the components of both the peach and dates programs?
- c) What were the major challenges that both programs faced since their inception and how were they addressed?

Proposed Methodology:

- a) Conduct meetings with peach and date teams, senior management, M&E staff and other members of the project to collect the historical perspective on the inception, development and implementation of the peach and dates programs.
- b) Conduct meetings with the USAID Firms Project's partner SMEs
- c) Conduct desk review of the USAID Firms Project M&E related documents.

- d) Analyze the increase in sales and jobs of partner SMEs for both peach and dates sectors, relative to their baselines.
- e) Document the inception, evolution, and implementation of different components of both the peach and dates programs. More specifically, summarize the best practices adopted during the implementation of the programs.
- f) Document the achievements of each component for both the programs.
- g) Document the major challenges that both programs have faced since their inception and how they were addressed

Sub-Objective 3: Acquire information on the distribution of economic gains across the peach and date value chains by various players.

Key Questions:

- a) What were the profit margins, price structure, and cost drivers for the peach and date stakeholders? (these include input suppliers, nursery developers, producers, transporters, traders, wholesalers, retailers, processors, exporters, and other stakeholders such as government, academia and Civil Society Organizations (CSOs))
- b) What is the increment in sales at farmer level to intermediaries and to local market and from intermediaries to exporters, for both the peach and dates sectors?
- c) How much labor is required at each step and function of the value chain?

Proposed Methodology:

- a) Gather price and sales related information of all stakeholders in the peach and dates value chains. Information will be collected from: input suppliers, nursery developers, producers, transporters, traders, wholesalers, retailers, processors, exporters, and other relevant stakeholders such as government, academia and Civil Society Organizations (CSOs)
- b) Gather information on the factors that affect the costs of peach and dates production including production, wastage, and sales. .
- c) Carry out analysis on the difference between farm gate and retail price for both peach and dates sectors;
- d) Determine the market share – costs and margins – for market participants(wholesalers, traders and middlemen) in both the peach and dates sectors;
- e) Determine the marketing channels of peaches and dates per variety and geographic location;
- f) Conduct separate profit analyses, with specific focus on market margins for different peach and dates sales channels for all stakeholders such as: input suppliers; nursery developers, producer, traders, wholesalers, retailers, and processors;
- g) Determine the price structures, cost drivers and labor requirements of local retailers, supermarket chains and other retailers for both the peach and dates sectors;
- h) Identify the increment in the price of a metric ton from sales at farmer level to intermediaries and to local market and also from intermediaries to exporters for both the peach and dates sectors.

Sub-Objective 4: Determine the labor multiplier and sales multiplier equations with assumptions for both the peach and dates sectors. These multipliers must be transferable for use by all stakeholders in the sector.

Key questions:

- a) What was the change in sales and employment in the peach and date sectors for the USAID Firms Project's beneficiaries from 2012 – 2013?
- b) What are the values of the sales and labor multipliers
- c) for the peach and date value chains? Include all necessary assumptions and qualifiers for further use by USAID for both sectors.

Proposed Methodology:

- a) Carry out in-depth analyses of the change, in sales of peach and dates value chain stakeholders in 2013, and extrapolate the impact in 2012.
- b) Carry out in-depth analyses of the change in the number of jobs of peach and date value chain stakeholders in 2013, and extrapolate the impact in 2012.

- c) Determine the sales and labor multiplier equations with assumptions (with separate equations for both the peach and dates sectors). These multipliers must be transferable for use by all stakeholders in these sectors.

Sub-Objective 5: Determine specific enabling environment constraints that impact peach and date value chains specifically with regard to sales and employment.

- a) **Key Questions:** What are some of the most important enabling environment constraints that hamper growth in sales and employment in the peach and dates value chain?
- b) List these constraints in hierarchical order in light of the extent and nature of their impact on sales and employment generation.

Proposed Methodology:

- a) Based on the analysis of primary and secondary data list the enabling environment constraints in different aspects of the peach and dates value chain. These may include but not limited to the constraints input supplies, lack and / or application of knowledge and skills, infrastructure facilities, market dynamics, Govt. policies and other market requirements etc.
- b) Consult key stakeholders to understand the nature of the impact of these constraints on the sales and employment generation.

Sub-Objective 6: Provide practical and realistic recommendations on how modification in the program interventions can create greater impact in generating sales and creating employment.

Key Questions:

- a) Keeping in mind the remaining life of project (LOP), what modifications, in the short term, can be made in the peach and dates program to create greater impact on sales revenue and employment.
- b) What measures, in the long term, can be adopted to accelerate sales and employment growth in the peach and dates value chains.
- c) Discuss the prerequisites of adopting these recommendations, if any, and the anticipated implications of adopting those suggestions for peach and dates value chains.

Proposed Methodology:

- a) Explore / Look for options of modifying the program with an aim of accelerating revenue generation and employment creation throughout the data collection.
- b) Consult stakeholders view on how program can be modified to create more sales and employment opportunities.
- c) Formulate/ propose relevant, specific, clear, and realistic actions to be taken (short and long-term) in both peach and dates sectors in priority order. The recommendation must be aimed at improving the program to create greater impact on sales and employment in the peach and the date value chains.

8. Deliverables:

- I. **Deliverable 1: Value Chain Study/Impact Assessment methodology presentation.** The consultant(s) will present the proposed methodologies for peach and date sectors with the aid of two PowerPoint presentations in English to the USAID Project management and relevant staff within four calendar days of the first introductory meeting.
- II. **Deliverable 2: Work plan and time frame.** The consultant(s) will submit two detailed work plans and time frames (one for peach and one for dates) including the itineraries of meetings, data collection approach, analyses, reporting and presentations before the start of the field work.
- III. **Deliverable 3: Regular updates on study status.** The consultant(s) are required to regularly provide brief written updates on the study process for both peach and dates studies. The frequency of the updates would be decided upon start of employment. The updates should cover the tasks for that period; whether they were completed or not and if not then why.
- IV. **Deliverable 4: Presentation on the preliminary findings.** Present the preliminary findings with

the aid of a PowerPoint presentation in English to the USAID Firms Project management and relevant staff within six calendar days of the completion of the field work for each sector. The field-work and preliminary findings for the peach sector are to be conducted and presented first, followed by the field-work and presentation on the preliminary findings for the dates' sector.

- V. **Deliverable 5: Draft study report.** The Consultant(s) will submit the two draft reports for the entire study (separate for peach and dates) of a maximum of 25 pages excluding annexes, in English as per the format provided by the USAID Firms Project within 16 calendar days of the completion of the field work.
- VI. **Deliverable 6: Final study report.** The Consultant(s) will submit two final Value Chain Study Reports (one each for peach and dates sector), of maximum 25-30 pages excluding annexure, in English language within 1 week after receiving the feedback from the USAID Firms Project on the draft report.
- VII. **Deliverable 7: Final study presentation.** Present the findings for both the peach and dates reports with the aid of two PowerPoint presentations in English to the USAID Firms Project management and relevant staff with the two final study reports.
- VIII. **Deliverable 8: Hard copies of questionnaires.** Properly filed/archived hard copies of filled-in questionnaires, transcripts of any discussions and interviews, photos etc. used for both studies.

9. Ethical Guidelines:

It is expected that the team will adhere to ethical guidelines as outlined in the American Evaluation Association's Guiding Principles for Evaluators. A summary of these guidelines is provided below, and a more detailed description can be found at www.eval.org/Publications/GuidingPrinciplesPrintable.asp.

- 1) **Informed Consent:** All participants are expected to provide informed consent following standard and pre-agreed upon consent protocols.
- 2) **Systematic Inquiry:** Evaluation team/ Evaluator conduct systematic, data-based inquiries.
- 3) **Competence:** Evaluation team/ Evaluator provide competent performance to stakeholders.
- 4) **Integrity/Honesty:** Evaluation team display honesty and integrity in their behavior, and attempt to ensure the honesty and integrity of the entire evaluation process.
- 5) **Respect for People:** Evaluation team/ Evaluator respect the security, dignity and self-worth of respondents, program participants, clients, and other stakeholders. It is expected that the evaluation team/ evaluator will obtain the informed consent of participants to ensure that they can decide in a conscious, deliberate way whether they want to participate.
- 6) **Responsibilities for General and Public Welfare:** Evaluation team/ Evaluator articulate and take into account the diversity of general and public interests and values that may be related to the evaluation.

10. Key Personal/Management & Team Composition:

The study will be outsourced to a team of consultants who will work closely with the USAID Firms Project M&E team (including the USAID Firms Project M&E Advisor and relevant staff). The USAID Firms Project will select individual consultants through a competitive selection process.

The USAID Firms Project M&E Advisor will be responsible for approving the study methodology, instruments and the final deliverables. He will work closely with the VCD component lead, the focal person for the peach and dates programs and other relevant members of the VCD team.

Team Requirements:

External consultants with the following portfolio will be sought to undertake the study:

Team Composition:

The study team will include:

1. One Team Leader (Masters in Agriculture Economics, PhD Preferred)
2. One Team Member (Masters in Economics/MBA, Business Development/Financial Accounting or

related field)

A. **Team Leader:** One team leader will be required for at least 73 days. A team leader experienced in impact assessment methodology and relevant fieldwork will be needed to facilitate the study. Specifically, the team leader will be required to:

- Design the study;
- Supervise execution and implementation;
- Supervise study protocols;
- Conduct spot checks
- Undertake data analysis; and
- Draft the final report, presentations etc.

Team Leader must meet the following qualification and experience requirement.

- Minimum Education/Experience: Masters in Agriculture Economics with 10 years of experience or PhD in Agricultural Economics with 5 years of experience preferred.
- Demonstrated experience of conducting impact assessment related to agriculture. Experience in peach and date sectors will be considered as a plus.
- Must possess excellent communication and interpersonal skills
- MUST be able to write and speak English.

B. **Team Member:** One will be required for at least 73 days. S/he will be responsible for accurate data collection, photography and supporting documents.

Team Member must meet the following qualification and experience requirement.

- Minimum Education: Master's in Economics/MBA, Business Development/Financial Accounting or related field
- Minimum Experience: At least three years of relevant experience
- Good understanding of impact assessment.
- Must possess good communications and interpersonal skills
- MUST be able to write and speak English

11. Reporting Line:

The consultant (s) will report to the M&E Advisor / Team Lead or his designated staff. He will work closely with the peach and dates sector teams, Office Director- Islamabad, Office Director – Karachi office and the relevant M&E staff.

12. Working Conditions and Duty Station:

The consultant(s) will be required to visit the primary project sites for the peach and date sector. These include Swat region in KP and Sukkur and Kahirpur districts in Sindh. Visits to the regional and national markets in Swat, Peshawar, Islamabad, Lahore, Karachi, Sukkur and other relevant areas will also be required.

13. Period of Performance and Schedule of Deliverables¹⁹:

The consultancy is expected to commence in **July 2013** and be completed by **October 31, 2013**. The Team Lead and Team Member both will have an LOE of at least 73 days each.

Description of tasks	No. of days per Consultant	Total LOE (Days) for two Consultants
Introductory Meetings	1	2

¹⁹Assessment schedules and deadlines are flexible to some extent and will be finalized in coordination with the successful consultant.

Document review and develop study instruments	1.5	3
Presentation on methodology	1	2
Meeting with the USAID Firms Project staff (Swat, Islamabad, Lahore, Karachi), and submission of work plan and time frame for peach and dates	4	8
Field work (meeting with beneficiaries, transporters, retailers, and other market players including travel).	16	32
Analyses of the study findings (Including meeting with the USAID Firms Project and associated travel).	5	10
Preparation and Presentation of the preliminary findings in PPT	1	2
Prepare first draft of report	5	10
Prepare final report	3	6
Preparation and Presentation of the Final findings in PPT	1	2
Total LoE Days for One Study	38.5 Days	77 Days
Total LoE Days for Two Studies	77 Days	154 Days

Estimated due dates of the deliverables are given below:

Deliverable	Due Date
1. Value chain/impact assessment methodology presentations for peach and dates	Day 4 of LOE
2. Work plan and time frame for peach and dates	Day 6 of LOE
3. Regular updates on studies status	As decided after award
4a. Presentation on the preliminary findings for peaches	Day 28 of LOE
4b. Presentation on the preliminary findings for dates	Day 54 of LOE
5a. Draft study report for peaches	Day 70 of LOE
5b. Draft study report for dates	Day 77 of LOE
6a. Final study report for peaches	Day 77 of LOE
6b. Final study report for dates	Day 77 of LOE
7a. Final study presentation for peaches	Day 77 of LOE
7b. Final study presentation for dates	Day 77 of LOE
8. Hard copies of questionnaires/photos etc. for both peach and dates studies	Day 77 of LOE

14. Client & Audience:

USAID Firms Project, USAID Economic Growth & Agriculture Office are the primary audience of this study.

15. Budget:

The estimated budget is taken out from the external version.

Annex -2 Methodology Framework:

Sr. #	Objectives	Key Questions - Complex Variables	Simple Variables	Activities/Avenues of Exploration	Values	Methodology	Source/s	Assessment Instruments/Tools	Activity Area
1	Document the Value Chains for the Peach Sector in Pakistan.	How is the Peach Value Chain Structured?	Different steps/stages in peach value chain	Defining peach value chain. Identification of different steps/stages and activities in peach Value Chain	List of value chain steps/stages and activities	Review of concept paper, proposal, base line survey report, project/strategy documents and other secondary sources, meetings with project peach team and M & E staff	Project Archive	Meetings/Discussion	Lahore and Islamabad
						Interviews and focus group discussions with relevant stakeholders of the peach value chain.	Project team and implementing partners/stakeholders	Focus Group Discussion/Key Questions	Swat
		Who are the different actors involved in the peach value chain and what are their functions?	Different actors involved in Peach value chain Functions of actors	Identification of Actors involved in value chain Identification of functions of Actors involved in value chain	List of Actors List of Functions by Actors	Meetings/discussion with project team, review of project/strategy documents Confirmation from Actors	Project Archive, Actors in peach value chain Project team and implementing partners	Focus Group Discussion/Key Questions	Swat, Peshawar, Islamabad, Faisalabad, Lahore, Multan and Karachi
		How do the different peach varieties reach to different destinations such as mandis, retailers and other export locations from farm gates?	Mapping of supply chain flow	Supply chain flow of different peach varieties on geographical basis and from farm gate to mandis, retailers, processors and export location Type of transport used between farm to different destinations.	List of mode of transportation by each destination List of mode of transport by variety of peach	Interviews and focus group discussions Desk review	Project team and implementing partners Progress Reports MAE Reports, stakeholders	Focus Group Discussion/Key Questions	Swat, Peshawar, Islamabad, Faisalabad, Lahore, Multan and Karachi
		What are some of the critical factors that influence the flow of peach from farm gate to other destinations?	Key areas in supply chain of peach	Identification of critical factors in supply chain of peach and from farm gate to different destinations.	List of critical factors affecting the flow of peach and from farm gate to diff. destinations.	Review of Govt. policies, Interviews and focus group discussions Desk review	Project team and implementing partners Progress Reports MAE Reports,	Focus Group Discussion/Key Questions	Swat, Peshawar, Islamabad, Faisalabad, Lahore, Multan and Karachi
2	Systematically document the USAID Firms project's interventions in different aspects of the peach Value Chain.	What were the different components of the Firms Project Fresh peach Value Chain development program?	Components of Firms Project fresh peach value chain development program Component wise interventions in different aspects of peach value chain	Enlistment of components of peach value chain development program. Enlistment of interventions in peach value chain.	List of components List of interventions	Meetings and discussion with peach team, M&E team and senior management Desk review	Project team Progress Reports MAE Reports	Meetings/Discussion	Lahore and Islamabad
		What were the achievements of each of the components of peach program?	Component wise achievements	Description of achievements made by each component.	List of achievements in the light of objectives	Meetings and discussion with peach team, M&E team and partner SMEs Desk review	Project team and implementing partners Progress Reports MAE Reports	Meetings, discussions	Lahore, Islamabad and Swat
		What were the major challenges that program faced since its inception and how they were addressed?	Major challenges by year Remedial measures undertaken	Identification of different challenges faced by the program from inception to its implementation and strategies adopted to resolve these challenges.	List of threats over time List of remedial measures over time	Meetings and discussion with peach team, M&E team and partner SMEs Desk review	Strategy Documents Project team and implementing partners Progress Reports MAE Reports Financial Reports Project team and implementing partners	Meetings & focus group discussions	Lahore and Islamabad Partner Farms
		What were the profit margins, price structure & cost drivers for the peach stakeholders?	Profit & loss analysis across value chain for various players	Net profit calculated for each player Price Structure Cost Drivers	% age share of each player in the total margin in value chain starting from farm gate Price structure Cost drivers	Interviews and focus group discussions Desk review of financial data	Project team and implementing partners Stakeholders in the value chain Progress Reports MAE Reports	Case study/key group discussion	Lahore, Islamabad & Karachi Partner Farms
3	Acquire information on the distribution of economic gains across the peach value chain by various players.	What is the increment in sales at farmer level to intermediaries and to local market and from intermediaries to exporters for peach sector?	Increment in sales and sales comparison with base line	Increment in sales at farm level Increase in sales at intermediary level Increase in sales at local market level	Volume of sales in Kg/hons	Interviews and focus group discussions Desk review of sales data	Sales Reports/tracker Project team, implementing partners & stakeholders Progress Reports MAE Reports	Case study/key group discussion	Lahore and Islamabad Partner Farms
		How much labor is required at each step and function of the value chain?	Labor involved at each step	Mapping of labor involved for performing different activities at each step at each value chain actor level	Estimation of labor involved at each step	Interviews and focus group discussions Desk review of employment tracker	Employment tracker Project team, implementing partners & stakeholders Progress Reports MAE Reports	Case study/key questions, focus group discussion	Lahore and Islamabad Partner Farms
4	Determine the labor multiplier and sales multiplier equations with assumptions for peach sector. These multipliers must be transferable for use by all the stakeholders in the sector.	What was the change in sales and employment in the peach sector for Firms beneficiaries from 2012-2013?	Impact on volume of sales due to interventions Impact on Employment	Impact on volume of sales Impact on jobs due to interventions	Reasons of increase in Sales in Kg/hons No. of labour days increased	Interviews and focus group discussions Desk review	Project team, implementing partners and stakeholders Progress Reports MAE Reports	Case study/key questions, focus group discussion	Peshawar, Lahore, Islamabad, Multan, Faisalabad & Karachi Partner Farms
		What are the values of the sales and labor multipliers for the peach and value chains? Include all necessary assumptions and qualifiers for further use by USAID for both sectors.	Impact on volume of sales Impact on No. of jobs	Impact on volume of sales Impact on jobs due to interventions	Reasons of increase in Sales in Kg/hons No. of labour days increased	Interviews and focus group discussions Desk review	Project team, implementing partners and stakeholders Progress Reports MAE Reports	Case study/key questions, focus group discussion	Peshawar, Lahore, Islamabad, Multan, Faisalabad & Karachi Partner Farms
5	Determine specific enabling environment constraints that impact peach value chain especially with regard to sales and employment.	What are some of the most important enabling environment constraints that hamper growth in sales and employment in the peach value chain?	List of enabling environment constraints in peach value chain	Identification of constraints	List and description of constraints in peach value chain	Interviews and focus group discussions	Project team and implementing partners, Stakeholders Progress Reports MAE Reports	Case study/key questions, focus group discussion	Peshawar, Lahore, Islamabad, Multan, Faisalabad & Karachi Partner Farms
		List these constraints in the hierarchical order in light of the extent and nature of their impact on sales and employment generation.	List of enabling environment constraints in peach value chain	Extent and nature of Impact on sales and employment	Reasons of constraints on sales and employment	Interviews and focus group discussions	Project team and implementing partners Stakeholders Progress Reports MAE Reports	Case study/key questions, focus group discussion	Peshawar, Lahore, Islamabad, Multan, Faisalabad & Karachi Partner Farms
6	Provide practical and realistic recommendations on how modification in the program interventions can create greater impact in generating sales and creating employment.	What modifications, in the short term can be made in peach program to create greater impact on sales revenue and employment.	Lessons learned from past interventions Recommendations on interventions to be undertaken in near future	Identify interventions that resulted in increased returns on the product and created employment opportunities	List of interventions to be reviewed or amended (if required) List of new interventions Improved processes	Interviews with experts on peach value chain	Experts in peach value chain, Stakeholders Project team and implementing partners		
		What measures in the long term can be adopted to accelerate sales and employment growth in the peach and value chains.	Lessons learned from past interventions Recommendations on interventions to be undertaken in future	Identify interventions that carry long term objectives with the sustainable prospect for permanent growth	List of interventions to be reviewed or amended (if required) List of new interventions Strategy to convert proposed interventions into permanent practices.	Interviews with experts on peach and value chain	Experts in peach value chain Project team and implementing partners		
		Discuss the prerequisites of adopting these recommendations, if any, and the anticipated implications of adopting those suggestions for peach value chain.	Things to be planned before adopting or implementing any new suggested change/improvement or intervention	Review the capacity and potential of available infrastructure and resources. Identify the key enablers to activate new interventions as agents of change.	Effective result measurement of new interventions to ensure their sustainability and overall efficiency.	Interviews with experts on peach value chain	Experts in peach value chain Project team and implementing partners		

Annex -3 List of FGD Participants:

Sr. No.	Names	Category	Contact No.
1.	[REDACTED]	Peach Grower	[REDACTED]
2.	[REDACTED]	Peach Grower	
3.	[REDACTED]	Peach Grower	
4.	[REDACTED]	Peach Grower	
5.	[REDACTED]	Peach Grower	
6.	[REDACTED]	Peach Grower	
7.	[REDACTED]	Peach Grower	
8.	[REDACTED]	Peach Grower	
9.	[REDACTED]	Peach Grower	
10.	[REDACTED]	Peach Grower	
11.	[REDACTED]	Peach Grower	
12.	[REDACTED]	Peach Grower	
13.	[REDACTED]	Peach Grower	
14.	[REDACTED]	Peach Grower	
15.	[REDACTED]	Peach Grower	
16.	[REDACTED]	Peach Grower	
17.	[REDACTED]	Peach Grower	
18.	[REDACTED]	Peach Grower	
19.	[REDACTED]	Peach Grower	
20.	[REDACTED]	Peach Grower	
21.	[REDACTED]	Peach Grower	
22.	[REDACTED]	Peach Grower	
23.	[REDACTED]	Peach Grower	
24.	[REDACTED]	Peach Grower	
25.	[REDACTED]	Peach Grower	
26.	[REDACTED]	Peach Grower	
27.	[REDACTED]	Peach Grower	
28.	[REDACTED]	Peach Grower	
29.	[REDACTED]	Peach Grower	[REDACTED]
30.	[REDACTED]	Peach Grower	
31.	[REDACTED]	Peach Grower	
32.	[REDACTED]	Peach Grower	
33.	[REDACTED]	Processor	
34.	[REDACTED]	Processor	
35.	[REDACTED]	Processor	
36.	[REDACTED]	Peach Grower	
37.	[REDACTED]	Peach Grower	
38.	[REDACTED]	Peach Grower	
39.	[REDACTED]	Peach Grower	
40.	[REDACTED]	Peach Grower	

Annex -4 List of Wholesale Markets visited:

1. Khajoor Market, Khairpur Mir's
2. Lea market, Karachi
3. Khajoor Bazar, Lal Muhammad Street, Karachi
4. Goal Kiryana Market, Faisalabad
5. Akbari Mandi & F&V Market, Lahore
6. Fruit and Vegetable Market, Lahore.

Annex -5 List of Dates Clusters Visited:

1. Sukkur
2. Khairpur
3. [REDACTED] Kandhar
4. Therhi, Distt. Khairpur
5. [REDACTED] Distt. Khairpur
6. Garo Goth, Kandhra, Taluka Rohri, Distt. Sukkur

Annex -6 List of Value Chain Actors:

Sr. No.	Name and City	Category	Contact No.
1.		Commission Agent	
2.		Farmer	
3.		Farmer	
4.		Farmer	
5.		Farmer	
6.		Farmer	
7.		Trader	
8.		Processor	
9.		Processor	
10.		Trader	
11.		Trader	
12.		Trader	
13.		Trader	
14.		Trader	
15.		Trader	
16.		Trader	
17.		Trader	
18.		Retailer	
19.		Trader	
20.		Trader	
21.		Trader	
22.		Commission Agent	
23.		Dealer	

8. References

- *Date sector strategy 2010 by USAID Firms Project.*
- *Date Crop of Khairpur – Sindh Enterprise Development Fund*
- *Dates Baseline Survey 2012*
- *Date sector impact comparison, before and after scenarios*
- *Dates Fact Sheet 2013*
- *USAID Firms Project Date Program Design*
- *Agriculture Statistics of Pakistan 2010-2011*
- *Agriculture Statistics of Pakistan 2011-2012*
- *FAO STAT*
- *Dates World Production by Nusantara Plantations Sdn Bhd, 2013*
- *Fruit, Vegetable and Condiments Statistics of Pakistan 2011-2012.*

